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No. 1.

SYNOPSIS OF THE NORTH AMERICAN HYPOCREACEAE, WITH DESCRIPTIONS OF THE SPECIES.

BY J. B. ELLIS AND B. M. EVERHART.

(Concluded.)

GEN. X, LASIONECTRIA, Sacc.—Perithecia hairy.

145. LASIONECTRIA POLIOSA, E. & E. Parasitic on *Diatrype platystoma*, Schw., Florida, January, 1886. W. W. Calkins, No. 138. Journ. Mycol. II, p. 39.

Perithecia scattered, membranaceous, orange red, ovate-globose, one sixth millim. in diam., sparsely clothed, except the papilliform ostium, with straight, spreading, hyaline, septate, glandular hairs, about equal in length to half the diameter of the perithecia; asci sessile, oblong-cylindrical, about $75 \times 12 \mu$; sporidia biserial, oblong or subfusiform-oblong and subinequilateral, hyaline, uniseptate and slightly constricted at the septum, containing several nuclei irregularly placed, $18-22 \times 7-8 \mu$, ends rounded or subacute. The hairs which clothe the perithecia are at first about seven μ thick, with the ends obtuse and a little swollen, but at length they become elongated and attenuated above. This must be nearly allied to *N. tephrothele*, Berk., but in the description of that species the perithecia are not described as hairy.

146. LASIONECTRIA LASIODERMA (Ell.) Am. Nat., February, 1886, p. 194. Parasitic on old *Valsa lutescens*, Ell., on dead limbs of *Quercus coccinea*, lying on the ground, Newfield, N. J., June, 1882.

Perithecia mostly single, subamorphous, obtuse-conic, broadly perforated above, about one fourth millim. high, shaggy with short, septate, obtuse, imperfectly-developed hairs, dull red when dry, pale orange when moist; asci cylindrical, $75-80 \times 7-8 \mu$; sporidia uniserial, elliptical, hyaline, uniseptate, scarcely constricted, $11-12 \times 4-5 \mu$.

147. *LASIONECTRIA REXIANA* (Ell.) l. c. Parasitic on *Myxogasters* (*Chondrioderma spumarioides*), Adirondack Mts., N. Y., August, 1882. Dr. Geo. A. Rex.

Perithecia minute, less than one fourth millim. in diam., flesh-color, becoming darker, slightly compressed laterally, enveloped in white down, which forms little tufts, appearing under the lens like some minute, tufted, mucedinous growth; asci linear, 35—40 μ long, evanescent; sporidia uniseriate, oblong, hyaline, 1—2-nucleate (becoming uniseptate?).

GEN. XI, *GIBBERELLA*, Sacc.—Perithecia superficial, smooth, bluish or violet.

148. *GIBBERELLA PULICARIS* (Fr.) S: M. II, p. 417.

Cæspitose, stroma cortical; perithecia crowded, superficial, purplish, at length collapsing or laterally compressed; asci oblong, sessile, 8-spored, 60—75 x 12—16 μ ; sporidia biseriate, ovate, elliptical or subpyriform, subobtuse, somewhat curved, 3-septate, pale yellowish, 18—20 x 6—8 μ . The conidial stage is considered to be *Fusarium sambucinum*, Fekl., or *F. roseum*, Lk. This is quite a common species and is found on bark of dead limbs of various deciduous trees and on dead herbaceous stems—especially on dead stalks of *Zea Mays* and also on the grain.

149. *GIBBERELLA SAUBINETII*, Mont. Sacc. Syll. II, p. 554.

Perithecia gregarious, confluent-cæspitose and conerescent, coriaceo-membranaceous, verrucose, at length flaccid, plicate, ovoid, subcontracted at the base, bluish, 200—300 x 170—220 μ , papillate; asci oblong-lanceolate, acuminate above, contracted at the base into a short, thick stipe, 8-spored, 60—76 x 10—12 μ ; sporidia uniseriate or subbiseriate, fusiform, curved or straight, subacute, 3-septate, but scarcely constricted, nearly hyaline, 18—24 x 4—5 μ ; conidial stage, *Fusarium roseum*, Lk. The characters of this species, as here given, are taken from Sacc. Sylloge. From the specimens at our command, we have always found it difficult to separate this from the preceding species.

GEN. XII, *HYPONECTRIA*, Sacc. Syll. II, p. 455.—Perithecia covered, otherwise as in *Nectria*.

150. *HYPONECTRIA GOSSYPHII* (Schw.) Syn. Car., No. 207. On dead capsules of cotton plant, Carolina (Schweinitz).

Scattered, rather soft, immersed, perithecia globose, purplish flesh-color; ostiolum elongated to the surface and discharging gelatinous matter. The minute perithecia are deeply sunk in the substance of the immature capsules so as not to be seen unless the capsule is cut open, but, through the elongated ostiola, a gelatinous substance is discharged, which hardens on the surface of the capsule and gives it a purplish color. In the mature specimens the surface of the capsules is granulose or papillose from the subjacent perithecia. We have seen no specimens of this species, but we have received from Prof. F. L. Scribner a *Fusarium* on capsules of cotton from South Carolina, which may be the conidial stage.

GEN. XIII, SPHÆROSTILBE, Tul. Carp. III, p. 103.—Perithecia associated with or growing at the base of the conidiophorous fungi (*Stilbum* sp.), otherwise as *Nectria*.

151. SPHÆROSTILBE FLAMMEA, Tul. l. c.

Perithecia globose, bright red, nearly smooth, crowded on and near the conidiophorous stroma (*Atractium flammeum*, B. & Rav.); asci obovate-oblong, 8-spored; sporidia ovate, obtuse, 1-septate, hyaline, slightly constricted, $12-16 \times 5-6 \mu$. The conidial fungus, as represented in Rav. Fungi Car. V, 86, has the stromata at first narrow-conical, becoming finally flattened above and subpezizoid. The conidia linear-lanceolate, very large ($80-100 \times 6\frac{1}{2} \mu$), a little curved, 6-9-septate, hyaline, with a tinge of rose color. On maple bark, Carolina (Ravenel); on *Salix*, Louisiana, Langlois, No. 377. Berkeley, in Grev. IV, p. 47, adds: "There is a very distinct species on *Magnolia glauca*, Car. Inf., No. 5005 (*Atractium pallidum*, B. & C.), with short, fusiform spores 13μ long, with the endochrome retracted to either end."

152. SPHÆROSTILBE COCCOPHILA, Tul. l. c.

Perithecia numerous, on and near the conidiophorous stromata, very small, globose, obtuse, minutely papillate, very smooth, bright red, often 4-5 together, collapsing when old; asci linear, $60-80 \times 6\frac{1}{2} \mu$; sporidia oblique, 1-seriate, ovate, $10 \times 5 \mu$, 1-septate, subhyaline, slightly constricted. The conidial stage (*Microcera coccophila*, Desm., which has been sent from Florida by Dr. Martin and collected in Carolina by Mr. Ravenel (F. Am., 286), has the stroma arising from various species of dead bark lice. It is red, obtuse and about two millim. high. The conidia are linear-lanceolate, 5-7-septate and $55-65 \times 5-6 \mu$, nearly hyaline.

153. SPHÆROSTILBE GRACILIPES, Tul. l. c.

Perithecia collected at the base of the stilbum, small (one third millim.), red, light pruinose, fading out; asci cylindric-clavate; sporidia uniseriate, ovoid, $12-16 \times 4\frac{1}{2}-6 \mu$. The conidiophorous fungus (*Stilbum corynoides*, E. & E.) has the stem slender, gray, becoming nearly black, $\frac{1}{4}-\frac{1}{2}$ cm. long, head globose $\frac{1}{4}-\frac{1}{2}$ millim.), orange-yellow, becoming fuscous; conidia oblong-elliptical, hyaline, $5-6 \times 1\frac{1}{2} \mu$. On *Hibiscus*, *Carya*, *Melia* and *Platanus*, Carolina (Curtis and Ravenel); on *Melia*, Louisiana (Langlois).

154. SPHÆROSTILBE CINNABARINA, Tul. l. c.

Perithecia growing at the base of the conidiophorous stroma (*Stilbum cinnabarinum*, Mont.), few, sessile, globose, scarcely papillate, very smooth, orange-red, finally collapsing partially; asci clavate-oblong, $80 \times 13-16 \mu$; sporidia biserial, ovate-oblong, $22-26 \times 7 \mu$, plurinucleate; conidial stroma bacillary, clavate above, red, conidia ovoid, small, $3\frac{1}{2} \times 1\frac{1}{2} \mu$. On trunks of *Carya*, *Morus* and *Rhus*, Carolina (Ravenel), Louisiana (Hale).

GEN. XIV, MELANOSPORA, Ca.—Perithecia simple, ostiolum subulate-rostrate, often divided and brush-like (penicellate) at the tip; sporidia fuscous, distinguished from *Ceratostoma* by the soft texture of the perithecia.

155. MELANOSPORA LAGENARIA (Pers.) On the hymenium of some old *Polyporus*, Adirondack Mts., N. Y. Peck, in 27th Rep. N. Y. State Mus., p. 110.

Perithecia scattered or gregarious, emergent at length and bare, sphaeroid or subovoid, two fifths millim., rugulose, at first light tawny-yellow, finally liver-color and then black; beak straight or flexuous, attenuated above, same color as perithecium and many times longer; asci pedicellate, broad-clavate, 35—40 x 12—14 μ , 8-spored (also 4-spored, sec. De Not); sporidia in three series above, ellipsoid, attenuated at each end, simple, hyaline, becoming subfuscous, 11—12 x 6 μ . The foregoing is from Sacc. Syll. Prof. Peck says: "Asci very broad, delicate, fugacious; spores crowded, simple, elliptical, colored, 12—13 x 7½ μ ." He also adds: "The spores are sometimes found adhering in a mass to the apex of the long, slender ostiolum. The subicular tomentum is present in some of the specimens, and there is sometimes a hairy appearance to the perithecia, which seems to be due to this tomentum or to some mucedinous growth."

GEN. XV, ACROSPERMUM, Tode —Perithecia elongated or clavate, carnose or somewhat of a horn-like consistency; sporidia filiform.

156. ACROSPERMUM COMPRESSUM, Tode. On the dried stems of various herbaceous plants. N. A. F., No. 1318.

Perithecia solitary or subcaespitose, sessile, club shaped, attenuated above and generally compressed, pale at first, finally dark or olive-black, shining, smooth at first, becoming longitudinally subsulcate, 1—3 millim. high; asci filiform, very long (130—150 x 3—6 μ), 8-spored; sporidia packed side by side, filiform, pale, yellowish-hyaline, 90—100 x ¾—1 μ ; paraphyses slender.

157. ACROSPERMUM VIRIDULUM, B. & C. Grev. IV, p. 161. On decayed herbaceous stems, So. Car. (Ravenel). On fallen pear leaves and on fallen hickory limb, New Jersey (Ellis). N. A. F., 857. Also on white oak leaves, Texas (Ravenel, 166).

Perithecia scattered, ovate, one third millim. high, abruptly contracted below into a short stipe-like base, obtuse above, greenish-cinereous, subfurfuraceous; asci linear, 150—200 x 5—6 μ ; sporidia filiform, hyaline or slightly yellowish, about as long as the asci. The specimens on decaying hickory limb have the asci narrower (3½—4 μ), but do not appear to differ otherwise.

158. ACROSPERMUM FOLICOLUM, B. & C. Grev. IV, p. 161. Rav. Fung. Car. II, 65. On fallen leaves of elm and of *Celtis*, So. Car. Rav.

This in color and shape resembles *A. compressum*, but is shorter, mostly less than one millim. high, the asci also are longer (300—400 μ); perithecia slightly pulverulent.

159. *ACROSPERMUM RAVENELII*, B. & C. Grev. l. c. On leaves of *Cercis*, *Vitis* and *Fraxinus*. So. Car. (Ravenel).

"Clavatum breve; ascis elongatis; sporidiis filiformibus, minute, short, slightly attenuated downwards, at length somewhat clavate; asci long, linear, flexuous; sporidia long, filiform." We have not seen this.

160. *ACROSPERMUM CORRUGATUM*, Ell., Bull. Torr. Bot. Club, VIII, p. 124. *A. fultum*, Harkness, Bull. Cal. Acad. Sci., February, 1884, p. 47. On weather-beaten wood, Pleasant Valley, Utah (alt., 6,000 ft.), S. J. Harkness. On dead leaves of *Eucalyptus*, San Francisco, Cal., Dr. H. W. Harkness.

Perithecia wedge-shaped or liguliform, 1—1½ millim. high, supported by buttress-like portions, which unite with the main body of the perithecium about half way up, strongly transversely-grooved on both sides above, black, compressed and truncate above, so that the apex is in shape like the edge of a chisel, the whole attached below to a brown, rooting mycelium; asci cylindric-clavate, tapering below to a long, slender pedicel, 400—500 x 8—9 μ , with long, slender paraphyses; sporidia linear, 300—350 x 1½—2 μ , separating into cylindrical, 3-septate joints which are 17—20 μ long.

Since writing the foregoing, we have received from Rev. A. B. Langlois specimens of what we take to be

161. *NECTRIA VULGARIS*, Speg., found on stumps of orange trees at Pointe a' la Hache. La.; perithecia densely gregarious or cæspitose, yellow-orange, becoming darker; sporidia oblong-elliptical, 1-septate, 10—13 x 3—4 μ .

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NOTES ON FLORIDA FUNGI.--No. 10.

BY W. W. CALKINS, CHICAGO, ILLINOIS.

137. *HYPOMYCES ROSELLUS*, Tul.—Found on a fallen rotten limb. Rare. Of a beautiful rose color.
138. *VALSA STELLULATA*, Fr.—Very common on dead hickory limbs.
139. *LYCOGALA EPIDENDRON*, Fr.—On decayed bark. Rare.
140. *HEMIARCYRIA SERPULA*, Pers.—On the under side of fallen trees or bark, lying in yellow snake-like coils.
141. *HEMIARCYRIA RUBIFORMIS*, Pers.—Common on fallen decayed hickory logs.
142. *TRICHIA AFFINIS*, Rost.—Found along with 140 and 141. More rare.
143. *RADULUM MOLARE*, Fr.—Not common. Margin reflexed. On fallen limbs.
144. *RADULUM ORBICULARE*, Fr.—Margin not reflexed. Rarer than 143.
145. *RADULUM SPINULOSUM*, B. & C.—An elegant species. Pure white when fresh. Very rare. On a fallen *Nyssa*.
146. *RADULUM PALLIDUM*, n. sp., Mss.—Different from the preceding, having some resemblance to *Kneiffia*.
147. *AGARICUS SAPINEUS*, Fr.—Common on pine logs.
148. *DÆDALEA CONFRAGOSA*, Pers.—Common on old logs.
149. *DÆDALEA AMBIGUA*, B. (*Trametes lactea*) Fr.—Not common.
150. *HELOTIUM CASTANEUM*, S. & E.—Rare. On leaves of *Devil wood*.
151. *SPHÆRIA ACANTHOSTROMA*, Mont.—Abundant on decayed fallen limbs of *Carpinus*. Not found on any other wood.
152. *SPHÆRIA BARBIROSTRIS*, Desf.—On a dead limb along with *Hypoxylon Howeanum*. First detected in the United States by Ellis.
153. *CERACEA VERNICOSA*, Cragin.—Rare on rotten wood.
154. *HYPOCREA GELATINOSA*.—On a decayed limb.
155. *ISARIOPSIS CARNEA*, E. & M.—On living leaves of *Osmanthus*. Not common.
156. *LOPHIOSTOMA FLORIDANUM*, E. & E.—A new species found by me on old *Diatrype stigma*. Described in April No. JOURN. MYCOL.
157. *ARCYRIA POMIFORMIS*, Roth.—Found on rotten wood.
158. *DIMEROSPORIUM NIMBOSUM*, E. & M., n. sp.—On dead *Smilax*.
159. *CONIOPHORA* ——— (?).—Not yet determined. No. 551 of Ellis.
160. *PENIOPHORA* ——— (?).—Species not yet determined. No. 72 and 177 of Ellis.
161. *ASTERINA PURPUREA*, E. & M., n. sp.—On leaves of *Olea Americana*. Described in November No. JOURN. MYCOL.
162. *NUMMULARIA BULLIARDI*, Tul.—Abundant on decayed limbs.
163. *GLENOSPORA CURTISH*, B.—On living young *Myrica* and *Quercus*. It never starts on dead leaves.

The foregoing closes my work to December, 1886. My remark under No. 103 as to discovery by Ellis should refer to *Sphæria barbirostris*.

SKETCH OF DR. GEORG WINTER.

BY W. A. KELLERMAN.

Having enjoyed a short but pleasant personal acquaintance with Dr. Winter and worked under his direction in his own laboratory, it is with especial pleasure that I present to the readers of the JOURNAL OF MYCOLOGY a brief outline of his life and mycological work. His quiet enthusiasm, his thoroughness and conscientiousness in all his work, his uniform kindness to all associated with him, conspire to make him a most valuable and respected teacher.

He was born Oct. 1st, 1848, at Leipzig, Germany. He attended the Gymnasium in his native city, then went to Munich, where he studied one semester under Nægeli and Radlkofer. On returning to Leipzig, he studied in the botanical laboratory of Schenk and in the Zoological Institute of Leuckart. For a half year he was assistant provisionally to Prof. Kraus in the Botanical Institute at Halle. In October, 1873, he received his doctorate in philosophy at Leipzig, having for his thesis "Die Deutschen Sordarien."

Dr. Winter continued his mycological studies at Leipzig till 1876, when he removed to Zurich in Switzerland and became "Docent fuer Botanik" in the Polytechnicum and in 1878 the same also in the University. His lectures here included Cryptogams, Plant Diseases and Special Botany. Rabenhorst, the editor of *Fungi Europæi*, *Algen Europæi*, &c., died in 1881, and Dr. Winter undertook the continuation of his *Exsiccata*. Through the help of numerous American friends, he was enabled to widen the scope of this invaluable collection and make it *Fungi Europæi et Extra-Europæi*. The editorship of *Hedwigia* Rabenhorst gave over to Dr. Winter at the end of the year 1878 and the latter still continues to edit the same.

Domestic affairs made it necessary for Dr. Winter to return to Leipzig in 1883. From this time he has devoted himself exclusively to mycological studies, more particularly to his important and critical work, "Pilz-flora von Deutschland" (2d edition of Rabenhorst's *Kryptogamen-flora*, *Pilze*). Aside from this, his special attention is given to exotic fungi; he will also soon complete Monographs of the genera *Meliola* and *Asterina*. Being in correspondence with nearly all living mycologists, he has been able to make his herbarium of fungi extremely large, perhaps the third in rank of the entire world. It is especially rich in type specimens both of older and of living authors. It contains *complete* sets of the most valuable exsiccata, as of Fuckl, Rabenhorst, Klotzsch, Thuemen, Ravenel, Ellis, Plowright, Rehm, Kunze, &c. Dr. Winter's publications, so far as they concern fungi, are to date as follows :

1. Die Deutschen Sordarien, Halle, 1873.
2. Diagnosen und Notizen zu Rehm's Ascomyceten, Fasc. 1, 2. *Flora*, 1872.
3. Ueber den Heliotropismus von *Peziza Fuckeliana*. *Botanische Zeitung*, 1874.
4. Die durch Pilze verursachten Krankheiten der Kulturgewächse. Leipzig, 1878.
5. Diagnosen neuer Pilze, *Hedwigia*, 1871.
6. *Pyrenomycetes novi austriaci*, *Hedwigia*, 1872.
7. Diagnosen neuer Pilze II, *Hedwigia*, 1872.
8. Mykologische Notizen, *Hedwigia*, 1873.
9. Mykologische Notizen, *Hedwigia*, 1874.
10. *Hypocreopsis*, ein neues *Pyrenomyceten* Genus, *Hedwigia*, 1875.
11. Ueber *Napicladium Soraueri*, *Hedwigia*, 1875.
12. Ueber das *Aecidium* von *Puccinia* ~~canadensis~~ *undinacea*, *Hedwigia*, 1875. arun
13. Cultur des *Puccinia sessilis* und deren *Aecidium*. Sitzungsberichte d. naturf. Gesellsch. zu Leipzig, 1874.
14. Mykologische Notizen, *Hedwigia*, 1877.
15. Ueber ein natuerliches System der Thallophyten, *Hedwigia*, 1879.
16. Einige Mittheilungen ueber die Schnelligkeit der Keimung der Pilzsporen und das Wachsthums ihrer Keimschläuche, *Hedwigia*, 1879.
17. Mycologische Notizen, *Hedwigia*, 1879.
18. Bemerkungen ueber einige Uredineen, *Hedwigia*, 1880.
19. Bemerkungen ueber einige Uredineen und Ustilagineen. *Hedwigia*, 1880.
20. Mykologische Notizen, *Hedwigia*, 1880.
21. Mykologisches aus Graubunden, *Hedwigia*, 1880.
22. Verzeichniss der im Gebiete von Koch's Synopsis beobachteten Uredineen und ihrer Nährpflanzen, *Hedwigia*, 1880.
23. Wartmann und Winter; Schweizerische Kryptogamen. Cent. VIII et IX, Hottingen, 1880 et 1882.
24. *Fungi helvetici novi*, *Hedwigia*, 1881.
25. Notizen ueber einige Discomyceten, *Hedwigia*, 1881..
26. *Pezizæ Sauterianæ*, *Hedwigia*, 1882.
27. *Fungi nonnulli novi*, *Hedwigia*, 1882.
28. Ueber die Gattung *Harknessia*, *Hedwigia*, 1882.
29. Ueber einige Nordamerikanische Pilze I et II, *Hedwigia*, 1882.
30. Mycologische Notizen, *Hedwigia*, 1884.
31. Exotische Pilze I, *Flora*, 1884.
32. Exotische Pilze II, *Hedwigia*, 1885.

33. Nachträge und Berichtigungen zu Saccardo's Sylloge Fungorum, Vol. I, II, *Hedwigia*, 1885.

34. Winter und Demetrio; Beiträge zur Pilzflora von Missouri. *Hedwigia*, 1885.

35. Contributiones ad Floram mycologicum lusitanicum. Series V Boletim da Sociedade Broteriana, 1883.

36. Contributiones ad Floram mycologicum lusitanicum. Series VI Boletim da Sociedade Broteriana, 1884.

37. Ueber die Gattung *Corynelia*. Berichte der deutschen Botan. Gesellsch. 1884.

38. Nonnulli Fungi Paraguayensis a Balansa lecti, *Revue Mycologique*, Octobre, 1885.

39. New North American Fungi, *Bulletin Torr. Bot. Club*, No. 1, 1883.

40. New North American Fungi, *Bulletin Torr. Bot. Club*, No. 5, 1883,

41. New North American Fungi, *JOURNAL OF MYCOLOGY*, August, 1885.

42. Fungi novi Missouriensis, *JOURNAL OF MYCOLOGY*, October, 1885.

43. Rabenhorst's Kryptogamenflora von Deutschland, Oesterreich und der Schweiz. II Auflage: Die Pilze bearbeitet von Dr. G. Winter, Leipzig, von 1880 an.

TERFEZIA LEONIS, TUL.--TUBER NIVEUM (DESF.)

This highly esteemed species, known as the "White Truffle," has been sent from Northwestern Louisiana by Rev. A. B. Langlois, who reports it as quite common in the red sandy soil along the Red river in the vicinity of Natchitoches. It is much prized by the people there as a delicacy for the table, either eaten fresh or after having been sliced and dried. The specimens sent by Mr. L. were subglobose and one of them full two inches in diameter, strongly plicate or furrowed below, nearly smooth and pale reddish-brown outside, marbled white within and of compact texture much like a potato, but softer. When first dug from the ground the color is a pure white, the reddish-brown tint being due to exposure to the air. The asci obovate or subglobose, 75—80 x 60—70 μ . Each contain eight globose spores thickly clothed with obtuse, elongated, wart-like tubercles and about 20 μ in diameter. The home of the white truffle is said to be in Northern Africa, though it is not uncommon in Southern Europe, where its growth is favored by the mild winters. Fries mentions that two specimens of this species have been found in Sweden in the vicinity of Linköping, but it is not common so far north. Its occurrence in the Red river region of Louisiana is less remarkable and makes it seem not improbable that it may be found in other localities in the Southern States.

J. B. E.

OBITUARY.

British mycology has suffered another severe loss by the death of CHRISTOPHER EDMUND BROOME, M. A., of Batheaston, for many years associated with the Rev. M. J. Berkeley in the production of numerous contributions to the Linnean Society and the Annals of Natural History. Although ten years the junior of the latter and apparently more active and vigorous, yet his friends have not failed to observe a gradual decline during the last twelve months, which has somewhat suddenly come to a fatal termination. His quiet, unassuming manners, his extreme modesty in all scientific matters and his universal kindness and geniality endeared him to all who knew him.—*Grevillea*.

NEW LITERATURE.

BY W. A. KELLERMAN.

“BRITISH PYRENOAMYCETES; A PRELIMINARY LIST OF KNOWN SPECIES.” By G. Masee. *Grevillea*, December, 1886.

“NEW BRITISH FUNGI.” By M. C. Cooke. l. c.

“PRÆCURSORES AD MONOGRAPHIA POLYPORORUM.” By M. C. Cooke. l. c.

“FUNGUS FORAYS, 1886.” l. c.

“KRYPTOGAMEN-FLORA VON DEUTSCHLAND, OESTERREICH UND DER SCHWEIZ, PILZE, VON DR. G. WINTER, 26. LIEFERUNG, PYRENOAMYCETES (SPILÆRIACEÆ)."

This Lieferung is occupied mostly with the families *Diatrypææ*, with the genera *Calosphæria*, *Quaternaria*, *Scoptria*, *Diatrypella*, *Diatrype*, and *Xylariææ*, with the genera *Nummularia*, *Hypoxydon*, *Ustilina*, *Poronia* and *Xylaria*. Dr. Winter unites under the genus *Calosphæria* the forms (without stroma) with eight to many-spored asci, with or without beaked perithecia. *Calosphæria* possesses, besides the conidia-bearing mycelium, also special conidia-stromata which resemble the perithecia. *Diatrypella*, having asci with many spores, and *Diatrype*, having asci with eight spores, are nevertheless well distinguished by several other characters. In the large genus *Hypoxydon* are included forms that differ widely, but they are all connected by intermediate species. “Notwithstanding the difference outwardly, all the species show a decided correspondence in the structure of the ascus-layer, also, so far as known, in the structure connected with the conidia.”

“THE DRY-ROT FUNGUS; MERULIUS LACHRYMANS.” Worthington G. Smith, *Gardeners' Chronicle*, Dec. 13, 1886.

“UEBER ALKOHOLGÄHRUNG UND SCHLEIMFLUSS LEBENDER BÄUME, VERURSACHT DURCH ENDOMYCES MAGNUSII, N. SP. UND LEUCONOSTOC LAGERHEIMII, N. SP. VORLÄUFIGE MITTHEILUNG.” Von Prof. Dr. F. Ludwig, *Hedwigia*, Bd. XXV, Heft. V, 1886.

“REVISION DER HYSTERINEEN IM HERB. DUBY.” Von Dr. Rehm. l. c.

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No. 2.

ADDITIONS TO CERCOSPORA, GLOEOSPORIUM AND CYLINDROSPORIUM.

BY J. B. ELLIS AND B. M. EVERHART.

CERCOSPORA DESTRUCTIVA, Ravenel.—On dying leaves of *Euonymus Japonica*, Aiken, So. Car., September, 1886. H. W. Ravenel, No. 4122. Spots amphigenous, brown, becoming gray or whitish, 3—4 millim. in diam., with a narrow, raised, darker border, sometimes confluent and covering a large part of the leaf; hyphæ amphigenous, but more perfectly developed above, erumpent, in large (one sixth to one fifth millim.) scattered, spæriæform tufts of a smoky olive color, 30—45 x 3—4 μ , olive-brown, simple, subdentate above, sparingly septate, bearing at their tips the oblong or oblclavate, 1—3-septate, subhyaline, 20—40 x 3 μ conidia.

CERCOSPORA SERPENTARIA, E. & E.—On living leaves of *Aristolochia serpentaria*, Faulkland, Del., September, 1886. A. Commons, No. 337. Spots amphigenous, gray, with a narrow black border, which again is often surrounded by a fuscous belt included in a second narrow black border, diameter of the gray spot, 1—1½ millim., or of the whole, 3—4 millim.; hyphæ mostly hypophyllous, forming smoky-colored tufts thickly scattered over the gray spots, simple, continuous or sparingly septate, abruptly bent and toothed, pale brown, 50—75 x 4—5 μ ; conidia fusoid, 1—3-septate, 40—60 x 4—5 μ , or subacicular, elongated to 75 or 80 μ long, 3—5-septate, smoky or yellowish hyaline. Very different from *C. olivascens*, Sacc.

CERCOSPORA STYLOSANTHIS, E. & E.—On dead, brown, rather indefinitely-limited spots and parts of the leaves of *Stylosanthes elatior*, Delaware, September, 1886. Commons, No. 336. Hypophyllous; tufts subconfluent, subolivaceous; hyphæ densely tufted, very short (15—20 x 4—5 μ), simple, contracted above, mostly entire, pale brown; conidia oblclavate, slender, 50—75 x 3 μ , faintly 3—5-septate, yellowish-hyaline. The affected leaves have a dead, scorched look.

CERCOSPORA SEQUOIÆ, E. & E.—On dying foliage of *Sequoia gigantea*, Germantown Nurseries, Penn., September, 1886. Com. Thos. Meehan. Forming large, compact, olivaceous tufts which, under the lens, resemble the perithecia of a *Sphærella*; hyphæ (under the microscope) ferruginous, brown, abruptly bent, subnodulose and toothed, sparingly

septate, 50--70 x 4--5 μ , oblong, becoming obclavate, same color as the hyphæ, 40--70 x 4--6 μ , 3--5-septate and some of them strongly constricted at the septa. This appears to be the only species described on coniferous trees, but it is a good *Cercospora*.

Var. *Juniperi*, collected by Dr. J. J. Davis at Powers' Lake, Kenosha Co., Wis., August, 1886, on foliage of *Juniperus Virginiana*, differs in its darker-colored tufts and more dwarfish habit—conidia 15--30 x 3 μ and hyphæ proportionally smaller.

CERCOSPORA CONDENSATA, E. & K., var. *Desmanthi*, was also sent by Mr. Langlois (No. 548) on *Desmanthus brachylobus*. The habit of growth is so different that we now think it should constitute a distinct species, C. DESMANTHI, E. & K.

CERCOSPORA AMARYLLIDIS, E. & E.—On fading leaves of *Amaryllis* (cult), Louisiana, July, 1886. Langlois, No. 589. Spots indistinct or none; amphigenous, but mostly epiphyllous, forming grayish, subelongated, indefinitely-limited patches scattered irregularly over the leaf; hyphæ rather densely tufted, coarse (6--7 μ thick and 50--70 μ long), brown, sparingly septate, subtruncate above and sparingly toothed, nearly straight; conidia much attenuated above and often subundulate, hyaline, 4--6-septate, 60--80 x 4--5 μ . A very distinct species. The hyphæ arise from a tubercular base and are for the most part nearly straight, cylindrical and entire, and of a light gray color at first, but become darker.

CERCOSPORA SAURURI, E. & E.—On living leaves of *Saururus cernuus*, Louisiana, July, 1886. Langlois, No. 599. Spots amphigenous, nearly black, suborbicular or irregular, not very accurately limited, leaf turns yellowish around them ($\frac{1}{2}$ — $\frac{3}{4}$ cm.); hyphæ amphigenous, tufted, pale brown, sparingly septate, subundulate, but nearly straight, 35--50 x 4 μ ; conidia hyaline, 3--5-septate, somewhat curved, 50--75 x 3 μ .

CERCOSPORA REPENS, E. & E.—On living leaves of *Brachylospermum difforme*, St. Gabriel, La., September, 1886. Langlois, No. 512. Leaves blotched above, with irregular-shaped, indefinite, purplish-brown spots, lower surface only faintly marked with reddish-brown stains; hyphæ hypophyllous, prostrate, spreading over a large part of the leaf, slender ($2\frac{1}{2}$ —3 μ), branching, brown, bearing the slender, hyaline, multinucleate, 70--80 x $2\frac{1}{2}$ —3 μ conidia at their extremities.

CERCOSPORA NOVEBORACENSIS, E. & E.—On leaves of *Vernonia noveboracensis*, Columbia, Mo., September, 1886. (Galloway, No. 163.) Spots none; hypophyllous, effused, forming olivaceous patches covering the greater part of the surface of the leaf; hyphæ loosely fasciculate and effused olive-brown, more or less undulate and toothed above, 1--5-septate, 50--75 x 4 μ ; conidia oblong-cylindrical, subolivaceous, 3--7-septate, obtuse at each end, very variable in length, 20--70 x 3--4 μ . Has the general appearance of *C. clarata*, Ger., nor are the microscopical

characters very different. The patches of hyphæ are, however, less definitely limited and the hyphæ themselves and the conidia may be a little shorter, and as the host-plants belong to different natural orders, it is perhaps best to regard the parasite on *Vernonia* as distinct. From *C. Vernoniæ*, E. & K., and *C. oculata*, E. & K., this will be separated on account of the entire absence of any definite spots. This also much resembles *C. Diospyri*, Thum.

CERCOSPORA LYCOPI, E. & E.—On living leaves of *Lycopus rubellus*, St. Gabriel, La., September, 1886. Langlois, 522. Spots amphigenous, indefinite, dusky brown, 3—4 millim.; hyphæ hypophyllous, in minute tufts, short (15—25 μ), pale brown, continuous, subdentate above; conidia obclavate, yellowish-hyaline, multinucleate, 50—75 x $2\frac{1}{2}$ —3 μ .

CERCOSPORA SORGHI, E. & E.—On leaves of *Sorghum Halapense*, Plaquemines Co., La., August, 1886. Langlois, No. 543. On *Zea Mays*, No. 613. Leaves stained dark purple, in strips of several inches in extent, the colored part becoming dead and dry; hyphæ amphigenous, in minute, scattering tufts on the dead part of the leaf, few in a tuft, brown, truncate above and laterally subdentate, 60—80 x 4 μ , continuous or sparingly septate below; conidia slender, faintly three or more septate, 70—80 x 3 μ , hyaline. The tufts of hyphæ are so minute as to be barely visible with a lens. In the var. on *Zea Mays*, there is no purple stain on the leaf, but brown.

CERCOSPORA COLUMBIENSIS, E. & E.—On *Ionidium concolor*, Columbia, Mo. Galloway, No. 71. Spots amphigenous, small (1 millim.), round white with a black border, thin; hyphæ mostly epiphyllous in minute tufts from a small tubercular base, pale brown, simple, entire or somewhat toothed above, 35—55 x 4—5 μ , continuous; conidia hyaline, slender, 4—5-septate, 60—80 x 3 μ at the thick end. The tufts of hyphæ are not abundant, 1—4 only on a spot usually. This is evidently closely allied to the South American species, *C. Tandilensis*, Speg., on *Ionidium glutinosum*, but differs in its much smaller spots and narrower conidia, which are not constricted at the septa.

CERCOSPORA PANCRATHI, E. & E.—On leaves of *Pancratium coronarium*, Louisiana, June, 1886. Langlois, No. 656. Spots amphigenous, oblong, 1—2 cm. long by $\frac{1}{2}$ —1 cm. wide, of a dull red color and mostly with a narrow, raised border; tufts amphigenous, scattered, minute; hyphæ arising from a sphaeriæform base, short (15—25 x 3 μ), brown; conidia narrow, subfuscous, nucleolate, subattenuated above, 40—50 x 3 μ .

CERCOSPORA ELEPHANTOPI, E. & E.—On leaves of *Elephantopus Caroliniensis*, September, Delaware (Commons, No. 75), Mo. (Galloway, No. 140.) Spots indefinite, dirty brown, surrounded by a dark, purplish-shaded border, 2—4 millim. in diameter, more obscure below; tufts subeffused, forming velvety, smoky brown or mouse-colored patches, which finally assume a bluish tint; hyphæ amphigenous, but more abundant below, short (25—35 x 3 μ), continuous, smoky-brown, simple and nearly entire; conidia slender, 75—100 x 3 μ , multinucleate, yellowish-hyaline, gradually attenuated above.

CERCOSPORA ZIZIÆ, E. & E.—On leaves of *Zizia cordata*, West Chester, Pa. B. M. Everhart. Spots brown, fading to gray in the center, nearly round, 3—5 millim. broad; fertile hyphæ erect, smoky-brown, nearly straight, entire, cæspitose, mostly epiphyllous, 3—8 in a tuft, 50—60 x 6—7 μ ; conidia hyaline, cylindric-clavate, multiseptate, 100—130 x 4 μ .

CERCOSPORA HYDROCOTYLES, E. & E.—On leaves of *Hydrocotyle interrupta*, Louisiana. Langlois, No. 681. Spots amphigenous, reddish-brown, 2—3 millim., definite, convex above, concave beneath; hyphæ amphigenous, in minute tufts, thickly scattered over the spots and giving them a granular appearance, pale brown, short and spreading, about 20 x 3 μ , continuous, nearly entire; conidia subcylindrical, subhyaline, 30—40 x 3 μ , nucleate.

CERCOSPORA LINI, E. & E.—On fading leaves of *Linum Virginianum*, Faulkland, Delaware, August, 1886. A. Commons, No. 248. Tufts effused, not on definite spots; affected leaves turning yellow; hyphæ simple, subolivaceous, continuous, forming small but dense tufts 35—40 μ high; conidia slender, 40—60 x 2½—3 μ , nucleolate, smoky-hyaline, slightly curved, gradually attenuated above.

NOTE.—We have also received a specimen of *Cercospora Nasturtii*, Pass., from Delaware, collected by Mr. Commons on *Sisymbrium officinale*. Hyphæ tufted, brown, 70—85 x 3½—4 μ ; conidia 60—75 x 4 μ , 3-septate or more, on pale, orbicular, rather indefinite spots, 3—4 millim. in diam. Specimens of *Cercospora Galii*, Ell. & Holway, from Delaware, on *G. pilosum*, have the conidia 60—90 x 3 μ , nucleolate, but not distinctly septate.

CERCOSPORA RHAMNI, Fckl.—Specimens of this species, collected by John Hogue at Makanda, Ill., October, 1884, have been sent us by Prof. A. B. Seymour. This is distinguished from *C. æruginosa*, Ck., by its longer hyphæ and conidia and its hypophyllous growth.

GRAPHIUM CLAVISPORUM, B. & C., with difficulty distinguished from *Cercospora viticola* (Ces.) Sacc., has been received from Maryland, sent by Prof. F. Lamson Scribner.

CERCOSPORA PLATYSPORA, Ell. & Holway.—On leaves of *Zizia integrima*, Racine, Wis. Leg. Dr. J. J. Davis, June, 1886. Spots amphigenous, small (1—2 millim.), irregular, partly limited by the veinlets, wood-colored, brown; tufts hypophyllous, black, lax, quite thickly scattered over the spots, but not confluent; hyphæ rusty brown, entire or faintly or sparingly septate, spreading and subundulate, 50—70 x 5—6 μ ; conidia subhyaline, oblong, granular, with an indistinct septum across the middle, mostly 35—40 x 6—7 μ , ends obtuse. The hyphæ often have the tips subuncinate-recurved, and mostly have lateral, shoulder-like projections, which apparently bear conidia.

CERCOSPORA MELIÆ, E. & E.—On living leaves of *Melia Azedarach*, Louisiana, September, 1886. Langlois, No. 791. Spots irregular, subconfluent or mostly in groups, small (2 millim.), dirty brownish or whitish, with a darker border above, much more indistinct and ill-defined

below; tufts amphigenous, crowded in the central part of the spots; hyphæ subolivaceous or smoky-hyaline, arising from a tubercular base, coarse, nearly straight, subtruncate above and finally 5—3-septate, 30—40 x 4—5 μ ; conidia linear-obclavate, hyaline, 80—120 x 4—5 μ . multiseptate.

CERCOSPORA CRUCIFERARUM, E. & E.—On *Raphanus sativus*, Missouri (Galloway, 129) and on *Sisymbrium officinale*, Delaware (Commons). Spots amphigenous, round, white with a black, raised border, small (1—2 millim.); hyphæ tufted, amphigenous, fuscous, distinctly septate, subgeniculate, subtruncate above and coarsely toothed, 80—120 x 4—5 μ ; conidia hyaline, slender, faintly multiseptate, 100—150 x 4½ μ . The character of the spots as well as the long hyphæ and conidia will distinguish this from *C. Nasturtii*, Pass., and *C. Armoraciae*, Sacc.

CERCOSPORA PLATANICOLA, E. & E.—On leaves of *Platanus occidentalis*, Louisiana, October, 1886. Langlois, No. 557. Spots amphigenous, small (1—3 millim.), scattered, irregular in shape and indefinitely limited, dark dirty brown; hyphæ amphigenous, in small, dark-colored, inconspicuous tufts with a sphaeriæform, tubercular base, short, subferuginous, sparingly toothed; conidia hyaline, narrow-obclavate, mostly curved, nucleate, 30—40 x 2—2½ μ . On the same leaves are larger (½—1 cm.) rusty-brown spots, on some of which is a *Phyllosticta* with small (4—5 x 2½ μ), hyaline sporules. The *Cercospora* is also found sparingly on some of the large spots, but is mostly confined to the smaller, darker-colored spots.

CERCOSPORA PRUNICOLA, E. & E.—On leaves of *Prunus Americana*, Point 'a la Hache, La., October, 1886. Langlois, No. 542. Spots amphigenous, subindefinite, purplish-brown, 2—3 millim. in diam.; hyphæ mostly hypophyllous, short (10—15 μ), slightly colored, arising from a distinct tubercular base; conidia nearly hyaline, nucleate, becoming faintly three or more septate, 30—45 x 2½ μ , much smaller and paler than those of *C. circumscissa*, Sacc., or *C. cerasella*, Sacc.

CERCOSPORA ATROMACULANS, E. & E.—On leaves of *Aralia spinosa*, Natchitoches, La., September, 1886. Langlois, No. 707. Spots amphigenous, black, subindefinite, orbicular, ½—1 cm. in diameter, few on a leaf, roughened by the tubercular-fasciculate tufts of hyphæ on both sides of the leaf; hyphæ brown, septate, irregular in outline, undulate, jagged and toothed and crooked above, about 75 x 4 μ ; conidia obclavate, subfuscous, granular and nucleate, 40—75 x 3—4 μ .

CERCOSPORA CINCHONÆ, E. & E.—On living leaves of *Cinchona* in a garden, Lafayette, La., September, 1886. Langlois, No. 720. Spots amphigenous, definite, nearly black above, with a narrow, slightly raised margin, brownish-black below, 2—3 millim. in diam.; hyphæ epiphyllous in small, scattered, sphaeriæform tufts, very short; conidia cylindrical, yellowish-hyaline, nearly straight, becoming faintly 3-septate, 25—35 x 2½ μ .

CERCOSPORA KAKI, E. & E.—On living leaves of *Diospyros Kaki* (Japan persimmon) in a garden, Lafayette, La., September, 1886. Langlois, No. 722. Spots amphigenous, irregular, ½—1 cm. in diam., definite, rusty-brown, becoming gray with a black center above, rather lighter and less definitely-limited below; hyphæ mostly epiphyllous, subhyaline, short (10—15 x 3 μ), forming scattered tufts with a tubercular base;

conidia cylindrical, 40—60 (mostly 40—50) \times 3—4 μ , yellowish-hyaline, nucleate (becoming septate?). This differs from *C. Diospyri*, Thm., in its epiphyllous growth on definite spots and in its much shorter, subhyaline, mostly entire hyphæ. Mr. L. also sends a *Cercospora* on leaves of *Viburnum plicatum* on blackish, subindefinite, subconfluent spots ($\frac{1}{2}$ —1 cm.), often becoming grayish in the center, with very short, epiphyllous, fasciculate, subhyaline hyphæ on a distinct, tubercular base and long (50—70 \times 2 $\frac{1}{2}$ μ), yellowish-hyaline, nucleate conidia. The specimens agree well with Peck's *C. varia*, except in the epiphyllous hyphæ. From an examination of Saccardo's specimen of *C. tineæ* in *Mycotheca Veneta*, we are inclined to refer the Louisiana specimens to that species, though we could not well make out the hyphæ in the M. V. specimen, on which, however, the hyphæ are epiphyllous and in sparsely-scattered tufts exactly as in the specimens sent by Mr. Langlois.

CERCOSPORA MIMULI, E. & E.—On leaves of *Mimulus alatus*, Columbia, Mo. Prof. S. M. Tracy. Spots amphigenous, round, whitish (1—2 millim. diam.), with a purple border; hyphæ amphigenous, short (15—25 μ), continuous, pale brown, comparatively thick (4—5 μ), entire or slightly toothed above, tufted on a minute tubercular base, tufts thickly scattered over the spots; conidia hyaline, sparingly septate or oftener continuous and nucleate, 40—60 \times 2 $\frac{1}{2}$ —3 μ .

CERCOSPORA VITEÆ, E. & E.—On living leaves of *Vitea agnus castus*, in a garden, Lafayette, La., September, 1886. Langlois, No. 727. Spots amphigenous, cinereous, brown above with a narrow, darker margin, paler and more indefinite below, irregular or suborbicular, 2—4 millim. diam; tufts epiphyllous, minute, scattered, black, consisting of short (10—15 \times 3 μ), brownish hyphæ more or less bent and irregular above and arising from a small tubercular base; conidia subcylindrical, the longer ones attenuated above, smoky hyaline, 30—45 \times 2 $\frac{1}{2}$ μ , becoming about 3-septate. On the same spots are small, erumpent, pale, membranaceous perithecia (*Pyrenochaete minor*, E. & E.) about 75 μ in diam., with a large apical opening surrounded by a circle of black, slender bristles, 75—100 μ long; sporules ovate-elliptical, hyaline, continuous, 2 $\frac{1}{2}$ —3 \times 1 $\frac{1}{4}$ —1 $\frac{1}{2}$ μ .

CERCOSPORA ERYTHRINÆ, E. & E.—On living leaves of *Erythrina crista galli*, Lafayette, La., September, 1886. Langlois, No. 728. Spots amphigenous, small (1 millim.), white, with a rusty-red border, rusty red below without any white center; hyphæ epiphyllous, fasciculate, on a tubercular base, stout, pale brown, geniculate and crooked above, 30—50 \times 4—5 μ ; conidia mostly about 35 \times 2 $\frac{1}{2}$ μ , nucleate, yellowish-hyaline, much attenuated above; some, however, are shorter and thicker (25—30 \times 3 μ) and 2—3-septate. On the same spots is a *Phyllosticta* with oblong-elliptical or ovate-elliptical sporules, 6—8 \times 2 $\frac{1}{2}$ —3 μ (*P. Australis*, Speg?).

CERCOSPORA LEONOTIDIS, Cke.—On living leaves of *Leonotis nepetæfolia*, Point a' la Hache, La., September, 1886. Langlois, No. 768. Spots amphigenous, pale, round, subindefinite, 2—3 millim. diam., often convex below; hyphæ amphigenous (mostly hypophyllous), very short (10—15 μ), on a tubercular base, nearly entire or olivaceous, brown; conidia nearly hyaline, linear-obclavate, about 3-septate, 35—45 \times 2 $\frac{1}{2}$ —3 $\frac{1}{2}$.

CERCOSPORA SALICINA, E. & E.—On leaves of *Salix nigra*, Louisiana, September, 1886. Langlois, No. 783. Spots amphigenous, blackish, irregular, more or less confluent and scattered thickly over the whole leaf, which appears as if blotched and spattered with some dark liquid; hyphæ fasciculate in small, amphigenous tufts, brownish-subhyaline, short, $12-20 \times 3 \mu$, entire or sparingly toothed and sometimes branched above; conidia obclavate, nucleate, subfuscous-hyaline, $25-40 \times 2-2\frac{1}{2} \mu$.

CERCOSPORA TRUNCATA, E. & E.—On living leaves of *Vitis indivisa*, Willd., Louisiana, November, 1886. Langlois, No. 780. Spots amphigenous, dirty brown, darker above, indefinite, small, subconfluent, thickly sprinkled over the leaf, giving it a spattered look. The leaf soon becomes dead and dry around the margin; tufts hypophyllous, quite evenly distributed on the spots, forming subvelutinous, smoky, olive patches, which finally become gray; hyphæ fasciculate, arising from a small, subtubercular base, cylindrical, simple, mostly straight and truncate above, the apex showing a round opening like the cross section of a tube, brown and only sparingly septate, $50-90 \times 4-5 \mu$; conidia slender-obclavate, hyaline, becoming 3-6-septate, gradually attenuated above into a long, slender point, $70-112$ by about 4μ at the base. This is very distinct from *C. viticola* (Ces.) Sacc. (*Graphium clavisporum*, B. & C.), but is closely allied to *C. canescens*, E. & M., from which it differs principally in its more dwarfed growth and different habitat.

CERCOSPORA CONSOBRINA, E. & E.—On living leaves of peach trees, Louisiana, June, 1886. Langlois, No. 685. Spots amphigenous, small (2 millim.), rusty brown, at length well defined, purple bordered; hyphæ epiphyllous in minute, scattered tufts, short $12-20 \times 2\frac{1}{2}-3 \mu$, subhyaline above and subdentate, arising from a small, tubercular base; conidia slender, hyaline, subcylindrical, $30-40 \times 2\frac{1}{2} \mu$, becoming faintly three or more septate. Very different from *C. persica*, Sacc.

CERCOSPORA VERBENICOLA, E. & E.—On leaves of *Verbena Xutha*, Louisiana. Langlois, No. 686. Leaves marked above and below with small (2-3 millim.), rusty-brown, indefinite spots; hyphæ amphigenous, but mostly hypophyllous, fasciculate, few in a tuft, coarse (about $40 \times 4 \mu$), subnodulose and irregular in outline, pale brown, 1-2-septate; conidia hyaline, nucleate, $30-50 \times 2\frac{1}{2}-3 \mu$, subcylindrical, only slightly attenuated above.

CERCOSPORA VIGUÆ, E. & E.—On leaves of *Vigua luteola*, Louisiana, October, 1886. Rev. A. B. Langlois. Spots amphigenous, small, irregular, reddish-brown; tufts effused, smoky-olivaceous, forming velutinous patches not entirely confined to the spots; hyphæ short ($35-45 \times 4-5 \mu$), crooked, spreading, shouldered and subdentate above, pale brown, mostly continuous, hypophyllous; conidia slender, hyaline, nucleate, becoming 3-5-septate, $70-110 \times 3 \mu$. *Cercospora canescens*, E. & M., was also found on the same leaves, but is readily distinguished by its distinct black tufts and its longer, straighter hyphæ and longer, broader, multiseptate conidia. Also quite distinct from *C. Phaseolorum*, Cke.

CERCOSPORA STILLINGIÆ, E. & E.—On leaves of *Stillingia sebifera*, Point a' la Hache, La., November, 1886. Rev. A. B. Langlois, No. 846. Spots amphigenous, suborbicular, dark brown, with a narrow, dark border, 2—4 millim.; hyphæ amphigenous, but mostly epiphyllous, very short (10—15 μ), colored, arising from a distinct tubercular base; conidia cylindrical, slightly curved, without any distinct nuclei or septa, 25—35 x 2½—3 μ . Tufts of hyphæ thickly scattered on the spots.

CERCOSPORA RUBROINCTA, E. & E.—On leaves of *Persica vulgaris*, Point a' la Hache, La., November, 1886. Rev. A. B. Langlois, No. 524. Spots amphigenous, dark red, with a lighter red border and the leaf more or less stained and blotched with red; hyphæ amphigenous, short (12—15 μ), olivaceous, fasciculate, forming loose, olivaceous tufts; conidia linear-subclavate, nucleate, slightly smoky, 35—50 x 2½—3 μ . Very different from *C. persica*, Sacc., which occurs on the same leaves and is a good *Cylindrosporium*. Not to be confounded with *Clasterisporium Amygdalearum*, Pass.

CERCOSPORA LIPPIÆ, E. & E.—On leaves of *Lippia nodiflora*, Louisiana, November, 1886. Langlois, No. 826. Spots amphigenous, grayish, round, with a definite, narrow, raised border, 2—3 millim. in diam.; hyphæ amphigenous, fasciculate on the tubercular base, pale brown, continuous, undulate and paler above, 35—50 x 3—4 μ ; conidia slender-obclavate, subhyaline, nucleate, 70—100 x 3 μ .

CERCOSPORA FRAXINITES, E. & E.—On living leaves of *Fraxinus*, Bohemia, Plaquemines Co., La., November, 1886. Rev. A. B. Langlois, No. 809. Spots amphigenous, dark brown, suborbicular and subindefinite, 3—4 millim. across, not abundant; hyphæ amphigenous, densely fasciculate, short (15—30 x 2½—3 μ), browning, crooked, forming numerous small, black tufts thickly scattered over the spots; conidia subhyaline, cylindrical or slightly attenuated above, nucleate, 35—60 x 2½—3 μ . *C. superflua*, E. & H., has broader, yellow-brown conidia. *C. Fraxini* (DC.) according to de Thumen's specimens, is also different.

CERCOSPORA HELIANTHI, E. & E.—Columbia, Mo., October, 1886. Prof. S. M. Tracy, No. 208. Spots none; hyphæ hypophyllous, fasciculate, olive-brown, nucleate, becoming septate, crooked above, 70—90 x 5—6 μ , forming loose, olivaceous, indefinitely-limited patches; conidia obclavate, olivaceous, nucleate, becoming 3--6-septate, 70—110 x 5—6 μ .

CERCOSPORA POPULINA, E. & E.—On leaves of *Populus alba* and *P. angulata*, Point a' la Hache, La., November, 1886. Rev. A. B. Langlois, Nos. 818 and 819. Spots amphigenous, irregular and subconfluent (2—5 millim.), dark brown, becoming gray or whitish; hyphæ densely fasciculate, short (12—15 μ), brownish, forming numerous black tufts thickly scattered over the surface of the spots; conidia cylindrical, slightly curved, scarcely attenuated above, hyaline, becoming faintly 1--3-septate, 25--40 x 2½—3 μ . In the form on *P. alba* the spots are scarcely discernible below on account of the down on the lower surface of the leaf. Very closely allied to *C. fraxinites*, only differing in habitat, mostly epiphyllous growth and shorter conidia.

CERCOSPORA PALLIDA, E. & E.—On living leaves of *Tecoma radicans*, Louisiana, September, 1886. Langlois, No. 797. Spots amphigenous, indefinite, more or less confluent, causing the leaf to turn yellowish or oftener purplish in spots which at length become blackish above and rusty-brown below; hyphæ fasciculate, mostly few in a fascicle, short, $15-20 \times 3 \mu$, pale brown, subnodulose, arising from a small tubercular base, the tufts thickly scattered over the discolored areas; conidia subcylindrical, nearly hyaline, granular or nucleate, becoming 3—5-septate, $30-55 \times 2-2\frac{1}{2} \mu$. *C. sordida*, Sacc, is of a more robust growth and dark, olivaceous color.

CERCOSPORA RACEMOSA, E. & M., has been found also on *Ambrosia tripida*. Kansas (Kellerman, No. 879).

GLOEOSPORIUM ARIDUM, Ell. & Holw.—On living leaves of *Fraxinus Americana*, Racine, Wis., June, 1886. Dr. J. J. Davis. Spots amphigenous, yellowish-brown, definite, irregular, 2 or more cm. across, rendering the substance of the leaf brittle, so that it easily breaks away; acervuli hypophyllous, pale, numerous, small; spores oblong or oblong-elliptical, hyaline, 2-nucleate, $5-8 \times 2\frac{1}{2}-3\frac{1}{2} \mu$. Differs from *G. fraxineum*, Pk., in the large, irregular spots and from *G. punctiforme*, E. & E., in its different spots and much smaller spores.

GLOEOSPORIUM YUCCÆGENUM, E. & E.—On living leaves of *Yucca filamentosa*, Columbia, Mo., August, 1886. B. T. Galloway, No. 115. Acervuli gregarious, small, erumpent, pale; spores cylindrical, mostly a little curved, granular, some of them 1—2-nucleate, ends obtuse, $20-25 \times 4-6 \mu$.

GLOEOSPORIUM PUNCTIFORME, E. & E.—On living leaves of *Fraxinus Americana*, Delaware. A. Commons, No. 287. Leaves faintly mottled above with yellow specks; acervuli erumpent on the under side of the leaf, exuding pale yellowish masses of spores which are of an oblong shape, $15-22 \times 7-8 \mu$, strongly constricted in the middle and uniseptate, ends obtuse. Quite different from *G. Fraxini*, Hark., or *G. fraxineum*, Pk.

GLOEOSPORIUM ACERINUM, Pass.—On leaves of *Acer dasycarpum*, Columbia, Mo., July, 1886. B. T. Galloway. Spots amphigenous, small, irregular and subangular, thickly scattered over the leaf, dirty brown with a shaded yellow border, causing the upper surface of the leaf to appear mottled with yellow; acervuli subcutaneous, erumpent on the lower surface of the leaf in small, pale, amber-colored masses; spores cylindrical, curved, 1-septate, $18-22 \times 3 \mu$. The specimens in Thumen's Mycotheca (No. 93) have the spores 3-septate—Saccardo, in Sylloge, says "spuriously biseptate." The general appearance of the Missouri specimens is the same as that of de Thumen's specimens and it is not improbable that when mature they may become 3-septate.

CYLINDROSPORIUM HUMULI, E. & E.—On living leaves of cultivated hops (*Humulus lupulus*). Faulkland, Del., September, 1886. A. Commons, No. 357. Spots amphigenous, but mostly hypophyllous, small, angular, limited by the veinlets of the leaf, rusty-brown; acervuli minute, black, amphigenous; conidia nearly cylindrical, hyaline, granular and nucleate, $40-50 \times 3 \mu$, oozing out in thick whitish cirrhi and soon diffused as a white film or coat over the surface of the spots.

CYLINDROSPORIUM CLEMATIDIS, E. & E.—On living leaves of *Clematis Virginiana*, Faulkland, Del., September, 1885. A. Commons, No. 235. Spots amphigenous, reddish-brown, round or subangular, 1—3 millim. in diam.; acervuli comparatively few, epiphyllous, immersed, scattered; spores exuding in white tufts, fusoid-linear, $75-80 \times 2\frac{1}{2}-3 \mu$, nucleate, becoming multiseptate, somewhat curved. Seems to differ from *C. Ranunculi*, Bon., in its distinct spots and shorter basidia.

CYLINDROSPORIUM PULCHRUM, Speg.—We have received from B. T. Galloway, Columbia, Mo., specimens of a fungus on living leaves of *Rumex* and which we believe to be the above-named species. The acervuli are thickly scattered over the entire surface of the leaf, are of a whitish color, very minute and burst out on both sides of the leaf, but perhaps more abundantly below. There are no definite spots, but the leaf is more or less tinged with yellow. The conidia vary from $8-35 \mu$ long and are $1\frac{1}{2}-2 \mu$ wide, without septa.

CYLINDROSPORIUM APOCYNII, E. & E.—On leaves of *Apocynum androsaemifolium*, Faulkland, Del., October, 1886. A. Commons, No. 407. Spots amphigenous, dark brown, rather indefinitely limited and of rather irregular shape, 2—4 millim. in diam., subconcentrically marked and subconfluent, at length whitened by the exuding conidia, which are $50-80 \times 4-5 \mu$, vermiform-cylindrical and more or less curved and finally faintly 3—5-septate; acervuli small, numerous, mostly erumpent above. The affected leaves soon become brown.

CYLINDROSPORIUM CERCOSPOROIDES, E. & E.—On living leaves of *Liriodendron Tulipifera*, Washington, D. C., October, 1885. Com. Prof. F. L. Scribner. Spots amphigenous, suborbicular, large (1 cm.), brown, rather indefinite; acervuli hypophyllous, punctiform, minute; conidia erumpent, filiform, multinucleate, becoming multiseptate, $130-170 \times 3-3\frac{1}{2} \mu$, hyaline (basidia obovate?). Appears like a diffused white down on the surface of the spots and much resembles a *Cercospora*, but the conidia appear to originate beneath the epidermis.

NEW LITERATURE.

BY W. A. KELLERMAN.

“THE MALARIAL GERM OF LAVERAN.” By Geo. M. Sternberg. M. D., Medical Record, May, 1886.

“NOTE SUR UN DEVELOPPEMENT GEMELLAIRE DU PHALLUS IMPUDICUS,” Par M. Boudier, Revue Mycologique, Janvier, 1887.

Note sur les “CHAMPIGNOUS DE DELILLE” echus aux heritiers N. Joly. C. Roumeguere. l. c.

“RECHERCHES SUR LE GENRE RHIZOCTONIA,” par E. Rostrup. l. c.

"FUNGI NOVI VEL MINUS BENE COGNITI FENNIAE ET GALLIAE DESCRIPSIT" P. A. Karsten. 1. c.

"CHAMPIGNON PHOSPHORESCENT PARASITE DU PATURIN DESPRES." L'abbé Joseph Dulac.

"FUNGI GALLICI EXSICCATI." Centurie XLe, C. Roumeguere.

The American species contained in this century are as follows : *Puccinia Zopfi*, Winter ; *Aecidium Giliae*, Peck ; *Ae. punctatum*, Pers. ; *Eutyloma Ranunculi*, Bon. var. *Thalictir*, Farlow ; *Septoria Nolitangeris*, Ger. ; *Sept. Cacaliae*, E. & K. ; *Cercospora Hydropiperis* (Thum.) Speg. ; *Eriueum Populinum*, Pers.

"CHAMPIGNONS PARASITES DES EUCALYPTUS [SEPTORIA EUCALYPTI], WINT. ET ROUM." C. Roumeguere. 1. c.

"SYNCHYTRIUM CUPULATUM," n. sp. Von. Dr. Fr. Thomas, in Ohrdruf. Botanisches Centralblatt, No. 1, 1887.

"REPORT OF THE FUNGUS DISEASES OF THE GRAPE VINE." By F. Lamson Scribner, Dept. of Agr., Botan. Divis. Bulletin No. 11.

The fungi described, with remedies, etc., in this report of 136 pages are the "Downy Mildew" (*Perospora viticola*, De By), the "Powdery Mildew" (*Uncinula spiralis*, B. & C.), "The Black Rot" (*Physalospora Bidwillii*, Sacc.), "Anthracnose" (*Sphaceloma umpelinum*, De By.), "Grape-leaf Blight" (*Cercospora viticola*, Sacc.) and "Grape-leaf Spot" (*Phyllosticta Labruscae*, Thum.) The illustrations cover seven pages, three of them colored.

"NOMENCLATURE OF COLORS FOR NATURALISTS." By Robert Ridgeway. Little, Brown & Co., Boston, 1886.

This neat book contains 130 pages and seventeen plates, many of them colored. Pp. 61-118 consist of a glossary for ornithologists, but the remaining parts are of equal interest and value to the botanical artist.

"FUNGI GUARANITICI." By Dr. Carlos Spegazzini (concluded). In the "Annales de la Sociedad Cientifica Argentina" for October and November, 1886, there are enumerated and described 119 species of fungi. Many of these are new and all are numbered as if forming part of a distributed set. The text is in Latin and the numbers range from 316 to 435. The following orders are included : *Myxomycetæ*, *Sphæropoidæ*, *Melaconieæ*, *Mucedinae*, *Dematieae*, *Tubercularieae* and *Stilbeae*. B.

ADDENDA.

The following omissions occur in the "Index to Genera and Species" on pp. five and six :

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No. 3.

NORTH AMERICAN AGARICS.--THE SUBGENUS AMANITA.

(BY A. P. MORGAN.)

AMANITA.—Agarics with white spores; volva contiguous from the first, discrete from the epidermis of the pileus; hymenophore discrete from the stipe. All terrestrial. Fries, Hym. Eur., p. 17.

In these, the most highly-developed *Agarics*, the veil is double, consisting of an outer or universal veil and a partial veil. The universal veil is called the *volva* and it envelopes the whole fungus in its younger state, and is afterward ruptured by the growth of the stipe; the partial veil at an early stage intervenes between the edges of the lamellæ and the stipe, and in the fully grown plant it commonly forms an *annulus* around the upper part of the stipe. In *Amanita*, the volva is united or connate only with the base of the stipe; it is separate and distinct from the epidermis of the pileus, though frequently remaining upon it in the shape of scales and warts; the annulus is of a delicate texture and hangs down from the upper part of the stipe. The lamellæ are free from the stipe.

ANALYTIC KEY TO THE SPECIES.

I. Annulati.

A. VOLVA WITH THE LIMB FREE:

- a. Volva dehiscent at the apex, 1-4.
- b. Volva circumscissile, 5-7.

B. VOLVA WHOLLY ADNATE:

- c. Pileus with the margin striate, 8-12.
- d. Pileus with the margin even, 13, 14.

C. VOLVA ALL FRIABLE:

- e. Warts of the pileus floccose, mealy, 15, 16.
- f. Warts of the pileus thick and hard, 17, 18.

D. VOLVA WHOLLY EVANESCENT, 19.

II. Exannulati.

E. VOLVA WITH THE LIMB FREE:

- g. Volva dehiscent at the apex, 20, 21.
- h. Volva ruptured irregularly, 22, 23.

F. VOLVA WHOLLY ADNATE, 24-26.

G. VOLVA EVANESCENT, 27, 28.

I. ANNULATI. Annulus present and conspicuous, encircling the upper part of the stipe.

A. Volva connate with the base of the stipe, with more or less of the upper free portion persistent.

a. *Volva dehiscent at the apex, persistent, entire; the pileus naked.*

1. AGARICUS CÆSAREUS, Scop. Fries, Hym. Eur. p. 17; Peck, 33d N. Y. Rep., p. 41. There are figures of this species in oil colors, natural size, in our herbarium.

Pileus hemispheric, then expanded, the margin striate, the flesh yellowish; stipe flocculose, stuffed with cottony fibrils; volva and annulus lax; lamellæ free, yellow; spores elliptic, .009—.010 millim. long. In woods. Vermont, Frost; New York, Peck; Carolina, Schweinitz; Ohio. Pileus 4—6 inches in diameter, stipe 5—8 inches in length. The color of the pileus is a brilliant orange, or nearly red, fading to yellow with age; the stipe is yellowish, with a yellow annulus; the large egg-shaped, persistent volva is white. This is the most showy of *Agarics* and well merits the appellation "Fungorum Princeps." It was known to the ancient Romans under the name *Boletus*, and was in high esteem among them as an article of diet. Badham says it is the only fungus known to the ancients which we can recognize by the description; Pliny describes perfectly its growth and development.

2. AGARICUS SPRETUS, Peck. 33d N. Y. Rep., p. 42.

Pileus subovate, then convex or expanded, whitish or pale brown, the margin striate; stipe equal, smooth, stuffed or hollow; volva large, persistent, somewhat sheathing; lamellæ reaching the stipe, white; spores elliptic, .010—.012 millim. long. In bushy or open places, not common. New York, Peck. Pileus 3—5 inches in diameter, stipe 4—6 inches long. The whole plant is sometimes white, but often the pileus and stipe are tinged with brown; the stipe has no bulb at its base and is sheathed more or less by the persistent volva.

3. AGARICUS VIROSUS, Fries. Hym. Eur., p. 18. Stevenson, B. F., Vol. I, p. 3. Cooke, Illust. pl. 1.

The whole plant white; pileus conic, then expanded, acute, glutinous; the margin repand-lobed, even; stipe cylindric from a bulbous base, scaly-lacerate; volva thick, floccose; annulus apical, shreddy, lax; lamellæ free, linear-lanceolate; spores globose, .010—.012 millim. in diameter. In sandy woods. Carolina, Curtis; Ohio, Lea; Pacific coast, Harkness. Pileus 3—5 inches in diameter stipe 4—6 inches long. A fetid and poisonous plant. Pileus generally produced on one side and lobed, scarcely ever depressed; the annulus is torn and adheres in shreds to the margin of the pileus. The conical pileus, appendiculate margin and scaly stem are very characteristic.

4. *AGARICUS PHALLOIDES*, Fries. Hym. Eur., p. 18. Peck, 33d N. Y. Rep., p. 42. Stevenson, B. F., Vol. I, p. 4. Cooke, Illust. pl. 2.

Pileus campanulate-expanded, obtuse, viscid; the margin orbicular, even; stipe stuffed, hollow at the apex, tapering from the base, nearly smooth; the volva free half way; lamellæ rounded, ventricose; spores globose, .008—.009 millim. in diameter. In woods everywhere; common. Pileus 3— $\frac{5}{8}$ inches in diameter, stipe 5—8 inches long. The color varies from nearly white through yellowish and gray to brown. It is an extremely poisonous plant and has a strong and disagreeable odor, especially as it begins to decay. *A. vernus*, Bull., is an early or spring form of this species; it does not appear to be different by any striking characteristic.

b. Volva circumscissile, the upper part remaining as scales or warts upon the pileus.

5. *AGARICUS MAPPA*, Fries. Hym. Eur., p. 19. Stevenson, B. F., Vol. I, p. 4. Cooke, Illust. pl. 4.

Pileus convex, then plane, dry, commonly scaly; the margin even; stipe stuffed, then hollow, globose-bulbous; the volva circumscissile; lamellæ attached to the stipe; spores globose, .007—.008 millim. in diameter. In open woods. Vermont, Frost; Carolina, Curtis; Minnesota, Johnson; Ohio. Pileus 2—3 inches in diameter, the stipe 3—4 inches long. A plant with a strong odor and poisonous qualities; commonly white, more nearly straw-color or citron. Distinguished by its large, globose bulb, with a mere rim around its summit.

6. *AGARICUS RECUTITUS*, Fries. Hym. Eur., p. 19. Fries refers for a figure to Berkeley's Outlines, pl. 3, fig. 3. but the species is not admitted by either Cooke or Stevenson.

Pileus convex, then explanate, dry, often scaly; the margin nearly even; stipe stuffed, then hollow, tapering, silky; volva circumscissile, the margin closely oppressed and sheathing, becoming obliterated; annulus distant, white; lamellæ striate, decurrent. In pine woods; common. Carolina, Curtis. Pileus about four inches in diameter, the stipe six inches in length. The color is brownish or livid-purplish. It seems to closely resemble *A. pantherinus*, differing from it chiefly in its pileus being dry with an even margin.

7. *AGARICUS RAVENELII*, B. & C. Centuries of N. A. Fungi, No. 51. This species appears to belong here.

"Pileus convex, areolate-warty, the warts pyramidal; stipe short, bulbous; volva thick, warty, somewhat lobed; annulus deflexed. In woods. June. South Carolina, H. W. Ravenel. Pileus four inches across, broken up into distinct areas, each of which is raised into an acute, rigid, pyramidal wart; stipe three inches high, one inch or more in thickness at the base, furnished with a thick, warty volva and a deflexed ring. A very fine species, allied to *A. strobiliformis*, Vitt."

B. Volva wholly adnate, circumscissile, the base marginate and persistent, the upper part broken up and distributed as scales and warts upon the pileus.

c. Pileus with the margin striate.

8. *AGARICUS RUSSULOIDES*, Peck. 33d N. Y. Rep., p. 43.

Pileus ovate, then convex or expanded, viscid, soon smooth, pale yellow or straw-color, the margin striate-tuberculate; stipe stuffed, nearly equal, bulbous; volva fragile, somewhat oppressed; annulus thin, subevanescent; lamellæ free, white, spores broadly elliptic, .010 millim. long. In open grassy woods; rare. New York, Peck. Pileus 1½—2 inches broad, stipe 2—3 inches long. The bulb is ovate and the volva fragile and easily broken into fragments. It is remarkable for the broad, striate margin of the pileus.

9. *AGARICUS MUSCARIUS*, Linn. Fries, Hym. Eur., p. 20; Peck, 33d N. Y. Rep., p. 43; Stevenson, B. F., Vol. I, p. 5; Cooke, Illust. pl. 117; I have never seen our plant this color.

Pileus convexo-expanded, the margin striate, the flesh beneath the viscid cuticle yellowish; stipe cobwebby within, soon hollow; volva adnate, concentrically scaly-marginate, the base ovate-bulbous; lamellæ reaching the stipe and striate-decurrent; spores elliptic, .008—.010 millim. long. In open woods; common. From New England and New York to Carolina, west to Ohio and Minnesota. It is not found on the Pacific coast. Pileus 3—6 inches in diameter, the stipe 4—8 inches long. The color of the pileus varies from orange through yellow to white. The lamellæ are white, sometimes with a yellowish tint. It can always be distinguished by the scaly-margined bulbous base of the stipe. The plant is a highly narcotic violent poison, producing delirium and death.

10. *AGARICUS FROSTIANUS*, Peck. 33d N. Y. Rep., p. 44. There is a figure of this species in our herbarium.

Pileus convex or expanded, bright orange or yellow, the margin striate; stipe stuffed, white or yellow, bulbous at the base, the bulb slightly margined by the volva; lamellæ free, white or tinged with yellow; spores globose, .008—.010 millim. in diameter. In hemlock woods. New England, Frost, under *A. affinis*; New York, Peck. Pileus 1—2 inches in diameter, stipe 2—3 inches long. It looks like a small form of the *Fly Agaric*.

11. *AGARICUS PANTHERINUS*, DC. Fries, Hym. Eur., p. 21. Stevenson, B. F., Vol. I, p. 6; Cooke, Illust. pl. 6.

Pileus convexo-expanded, the margin striate, the flesh beneath the viscid cuticle white; stipe stuffed, then hollow, nearly glabrous, the base ochreate by the separable volva, which has an entire and obtuse margin; lamellæ attenuate, free; spores elliptic, .007—.008 millim. long. In woods and pastures everywhere. Pileus 4—6 inches in diameter, stipe 5—7 inches long. Pileus white or brownish, never yellow or red. The annulus is commonly midway of the stipe or distant from its apex: it is often deflexed.

12. *AGARICUS EXCELSUS*, Fries. Hym. Eur., p. 21. Stevenson, B. F., Vol. I, p. 6; Cooke, Illust. pl. 7.

Pileus convexo-explanate, soft, fragile, scrupose, innate-fibrillose, covered with mealy, easily seceding warts; flesh white; stipe stuffed, cylindric, scaly below, immarginate-bulbous: the annulus seceding-free;

lamellæ ventricose, free, rounded behind; spores, .009 x .006 millim. In woods, especially of beech, everywhere. Pileus 4—5 inches in diameter; stipe 4—6 inches long. Pileus grayish or brownish, the warts always loose and seceding, leaving the surface peculiarly cavernous and rugose, papillate; the margin is at first even, but when fully developed it is plainly striate or even sulcate.

d. Pileus with the margin even.

13. AGARICUS STROBILIFORMIS, Vitt. Fries. Hym. Eur., p. 21; Peck, 33d N. Y. Rep., p. 46; Stevenson, B. F., Vol. I, p. 7, Cooke, Illst. pl. 8.

Pileus convex, then expanded, pelliculose, the margin even; warts hard, angular, closely adnate; flesh compact, white; stipe solid, floccose-scaly, thickened and bulbous below, the bulb beneath the soil, acutely margined and with concentric furrows; lamellæ rotundate-free; spores elliptic, .013—.015 x .008 millim. Borders of woods, everywhere. Pileus 6—10 inches broad, the stipe 6—8 inches in length; pileus white or whitish, sometimes yellowish on the disk, the margin even and extending a little beyond the lamellæ; scales of the pileus large, wart-like, angular, white or brownish, at length falling away. The bulb of the stipe is very large, sometimes attaining a diameter of 2½ inches and is somewhat pointed or conical below, but not distinctly rooting.

14. AGARICUS SOLITARIUS, Bull. Fries, Hym. Eur., p. 22; Peck, 33d N. Y. Rep., p. 45; *Agaricus polypyramis*, B. & C., Centuries of N. A. Fungi, No. 1. There is a figure of this species in our herbarium.

Pileus convex, then applanate, pelliculose, the margin even; warts angular, seceding; stipe solid, equal, imbricate-scaly below; bulb campanulate, rooting; annulus lacerate; lamellæ attenuate-attached; spores elliptic-oblong, .008—.012 x .006 millim. In thin woods and open places. From New York to Kentucky and southward. Pileus 3—6 inches broad, stipe 4—6 inches long, the root from a third to half the length. Pileus generally white, with the warts ochraceous or brownish. The annulus is soon lacerated and a part or most of it frequently adheres to the margin of the pileus and the edge of the lamellæ. The lacerated annulus and deeply-rooting bulb are the distinguishing features of this species.

C. The whole volva friable and broken up into scales and warts upon the surface of the pileus.

e. Warts of the pileus floccose mealy.

15. AGARICUS RUBESCENS, Pers. Fries, Hym. Eur., p. 23; Peck, 33d N. Y. Rep., p. 44; Stevenson, B. F., Vol. I, p. 8; Cooke, Illust. pl. 9.

Pileus convexo-expanded, strewn with unequal mealy warts, the flesh becoming reddish; stipe stuffed, conic-attenuate, scaly; annulus entire; lamellæ attenuate, reaching the stipe and decurrent in striæ upon it; spores elliptic, .007—.009 x .006 millim. In damp woods; common. From New England to Ohio and southward. Pileus 3—5 inches in diameter, stipe 4—5 inches long. The color of the pileus is somewhat variable, being alutaceous, yellowish or brownish, with a reddish tinge;

the margin is generally even, but sometimes it is found distinctly striate; the flesh is white, but changes to reddish when bruised or broken. The base of the stipe is thickened or bulbous, but there is no trace of the volva in the fully-grown plant.

16. *AGARICUS MONTICULOSUS*, B. & C. Centuries of N. A. Fungi, No. 2.

Pileus convex, areolate-verrucose; warts soft, angular, pyramidal; stipe flocculose-scaly, bulbous at the base; annulus thick, at length distant; lamellæ remote, ventricose. In moist and sandy woods; common. South Carolina, Curtis. "Pileus $2\frac{1}{2}$ —3 inches across, areolate, with a wart in the center of each areola, those towards the margin consisting of soft threads meeting in a point, but sometimes simply flocculent; the central warts angular, pyramidal, truncate, discolored. The warts are not hard and rigid as in *A. nitidus*."

f. Warts of the pileus thick and hard.

17. *AGARICUS NITIDUS*, Fries. Hym. Eur., p. 24; Stevenson, B. F., Vol. I, p. 9; Cooke, Illust. pl. 70; Fries, Icones Selectæ, pl. 12.

Pileus convex, then plane, firm, covered with dark warts which are thick, angular and indurated; margin wholly even; the flesh white; stipe stuffed, conic-attenuate, scaly; annulus lacerate, fugacious; lamellæ free, very broad, ventricose, white. In shady woods. California, Harkness. Pileus 3—5 inches in diameter; stipe three inches long. The pileus is whitish, rarely inclining to yellow or greenish; the stipe is bulbous at the base.

18. *AGARICUS ASPER*, Fries. Hym. Eur., p. 24; Stevenson, B. F., Vol. I, p. 9; Cooke, Illust. pl. 10.

Pileus convexo-plane, scabrous, with minute, pale warts, which are crowded and subinnate; the margin even; the flesh compact, brownish under the cuticle; stipe stuffed, then hollow, attenuate; the annulus entire, distant; lamellæ rotundate-free; spores .008 x .0065 millim. In beech woods; rare. Carolina, Schweinitz; Minnesota, Johnson. Pileus 2—3 inches in diameter, stipe 2—3 inches long. The pileus is of a sooty-olivaceous color, the stipe varies, short and attenuate or longer and cylindric.

D. Volva flocculose and wholly evanescent, the pileus therefore naked and free from scales and warts.

19. *AGARICUS LENTICULARIS*, Lasch. Fries, Hym. Eur., p. 26; Stevenson, B. F., Vol. I, p. 10; Cooke, Illust. pl. 17; Fries, Icones Selectæ, pl. 13.

Pileus globose, then convexo-plane, soft, naked, alutaceous, flesh-color; the margin even; stipe stuffed, bulbous, scaly; the annulus superior, ample; lamellæ free, becoming pale. In pine woods. Carolina, Curtis. Pileus 3—4 inches in diameter, stipe 4—6 inches long. The color of the pileus varies to pale and reddish-yellow; the lamellæ sometimes inclines to olivaceous.

II. EXANNULATI. Annulus obliterated or wholly wanting.

E. Volva connate only with the base of the stipe, more or less of the upper free portion persistent.

g. Volva dehiscent at the apex, persistent entire.

20. AGARICUS VOLVATUS, Peck. 33d N. Y. Rep., p. 47; Morgan, Flora M. V., No. 6. There are figures of this species in our herbarium.

Pileus convex, then nearly plane, hairy or floccose-scaly; the margin striate; stipe stuffed, floccose-scaly; volva large, firm, persistent, cup-shaped; lamellæ close, free, white; spores elliptic, .010 x .0075 millim. In moist woods, in spring and summer. New York, Peck; Ohio. Pileus 2—4 inches in diameter, stipe 3—7 inches long. The pileus is usually white, but the color varies to brownish, especially on the disk. This is an elegant species, well marked by the large, thick, elongated volva.

21 AGARICUS VAGINATUS, Bull. Fries, Hym. Eur., p. 27; Peck, 33d N. Y. Rep., p. 47; Stevenson, B. F., Vol. I, p. 11; Cooke, Illust. pl. 12.

Pileus thin, campanulate, then explanate, nearly naked; the margin membranaceous, pectinate-sulcate; stipe hollow, attenuate, fragile, floccose-scaly; volva sheathing, lax; lamellæ free, white; spores globose, .008—.010 millim. in diameter. In woods everywhere; common. Pileus 2—4 inches in diameter, stipe 4—6 inches long. The color of the pileus varies from white through tawny to brownish; there is usually a shade of brown, at least upon the disk. The stipe is not bulbous at the base; the large, free volva will be found entire beneath the soil.

h. Volva ruptured irregularly, the fragments of the upper part remaining as scales upon the pileus.

22. AGARICUS AGGLUTINATUS, B. & C. Hooker's Journal of Botany, 1849, p. 97.

White; pileus hemispheric, then plane, viscid, areolate-scaly from the remains of the volva; the margin thin, sulcate; stipe short, solid, bulbous; volva with a free margin; lamellæ broad, ventricose, rotundate-free; spores elliptic. In pine woods. South Carolina, Curtis. Pileus 1—2 inches in diameter, the stipe $\frac{1}{2}$ —1 $\frac{1}{2}$ inches long and two lines thick. "Resembling some of the dwarf forms of *A. vaginatus*, but at once distinguished by its solid stem and decidedly viscid, areolate-squamose pileus.

23. AGARICUS ADNATUS, Smith. Fries, Hym. Eur., p. 28; Stevenson, B. F., Vol. I, p. 12; Cooke, Illust. pl. 35.

Pileus convex, then plane, pale buff-yellow; the margin even; stipe stuffed, then hollow, fibrillose; volva lax, ruptured irregularly into scales which adhere to the pileus; lamellæ adnate, white; spores .010 x .008 millim. In woods. Minnesota, Johnson; California, Harkness. Pileus 2—3 inches in diameter, stipe 2—4 inches long. Volva connate half way with the base of the stipe; the free limb irregularly torn and most of it distributed as scales upon the pileus.

F. Volva wholly adnate, circumscissile, the base marginate and persistent.

24. *AGARICUS STRANGULATUS*, Fries. Hym. Eur., p. 27; Peck, 33d N. Y. Rep., p. 48; Stevenson, B. F., Vol. I, p. 11; Cooke, Illust. pl. 13; Fries, Icones Selectæ, pl. 11.

Pileus campanulate, then expanded, viscid, covered with broad, crowded scales, fragments of the circumscissile volva; the margin sulcate; stipe stuffed, then hollow, closely sheathed at the base by the volva, encircled below by a spurious annulus; lamellæ free, white. In woods; rare. New England, Frost; New York, Peck; Minnesota, Johnson; California, Harkness. Pileus 2—4 inches in diameter, stipe 4—6 inches long. The pileus is brownish in color and variegated with numerous persistent scales. Worthington Smith's measurement of the spores is .016 x .008 millim. Prof. Peck's specimens had globose spores, .010—.013 millim. in diameter. Fries gives no measurement of the spores in his specimen. There is some difference in the form of the volva as represented in the two figures of Fries and Cooke.

25. *AGARICUS NIVALIS*, Peck. 33d N. Y. Rep., p. 48. I think we must accept the judgment of Stevenson that *A. nivalis*, Grev., is merely a white *A. vaginatus*. There are figures of this species in our herbarium.

Pileus ovate, then convex or plain, naked; the thin margin striate; stipe stuffed, nearly smooth, bulbous, the bulb ochreate by the circumscissile, obtusely-margined volva; lamellæ free, white; spores globose, .008—.010 millim. in diameter. In open woods. Vermont, Morgan; New York, Peck. Pileus 2—3 inches in diameter, the stipe 4—6 inches long. The pileus is white, sometimes with yellow or ochraceous on the disk; the volva sheaths the bulb of the stipe and presents an obtuse margin exactly as in *A. pantherinus*; the upper part or calyptra is evanescent, seldom leaving scales upon the pileus.

26. *AGARICUS ONUSTUS*, Howe. Torrey Bulletin, Vol. V, p. 42. There is a figure of this species in our herbarium.

Pileus convex, then plane, covered with dark scales and warts; the margin even; stipe stuffed, fibrillose-mealy, tapering upward; the base concentrically scaly, fusiform and rooting; lamellæ reaching the stipe, white; spores oblique, apiculate, .009 x .006 millim. In grassy places in open woods; rare. New York, Howe; Ohio, Morgan. Pileus 3—5 inches in diameter, the stipe 4—5 inches long. Both pileus and stipe, in my specimens, are of a uniform mouse-color, with the flesh within and the lamellæ white; the warts are darker colored; the margin of the pileus is not at all striate; a peculiar sticky, cobwebby, powdery mealiness invests the stipe; the scales of the fusiform bulb are concentric and squarrose.

G. Volva flocculose and evanescent.

27. *AGARICUS FARINOSUS*, Schw. Syn. Car. 16; Peck, 33d N. Y. Rep., p. 49.

Pileus nearly plane, thin, flocculent, pulverulent; the margin sulcate; stipe stuffed or hollow, mealy, somewhat bulbous; volva flocculent-pulverulent, evanescent; lamellæ free, whitish; spores ovoid or subglobose, .006—.008 millim. in length. In woods; not common. New York,

Peck; Carolina, Schweinitz. Pileus an inch or more in breadth, stipe about two inches in length. The pileus is generally grayish-brown or mouse-colored, though sometimes nearly white; the dusty, flocculent covering is grayish-brown; the stipe is whitish and more or less mealy, with the slight bulb at first clothed like the pileus.

28. AGARICUS PUBESCENS, Schw. Syn. Car. 17.

Pileus yellow, covered with a thin pubescence; the margin involute; stipe short, at first white, becoming yellowish, bulbous, bulb thick; the volva evanescent; lamellæ white. In grassy grounds; rare. Carolina, Schweinitz. Stipe short, scarcely exceeding an inch in length. No one appears to have met with this species since the time of Schweinitz, hence we are unable to add anything to his brief description.

NOTE.--AUTHORITY IN NOMENCLATURE.

In the *Botanical Gazette* for November, 1886, is an article on the "Botanical Characters of the Black Rot, *Physalospora Bidwillii*, Sacc.," by F. Lamson Scribner. I am not aware that Saccardo has ever laid claim to *Physalospora Bidwillii*, which was first published by me in Torr. Bull. as *Sphaeria Bidwillii*. The fact that Saccardo included the species in question in his genus *Physalospora* does not make it his, nor has he anywhere advanced such a claim, but in the *Sylloge* and elsewhere puts the name of the original author in a parenthesis with his own name following, where he has placed a species in a different genus from that in which it was originally published. Dr. Winter, in his revision of the *Uredineæ*, etc., does not place his name after the parenthesis, and Fries, in his *Epicrisis*, does not use even the parenthesis, in which he is also, for the most part, followed by Cooke. In fact, the omission of the name of the original author of a species and the substitution of another in its stead is no more excusable than would be the appropriation of any other piece of property belonging to another by simply giving it another name.

J. B. ELLIS.

NOTES ON FLORIDA FUNGI.--No. 11.

BY W. W. CALKINS, CHICAGO, ILLINOIS.

The following species were collected by me from November, 1886, to March, 1887, all within ten miles of Jacksonville. My success has been a surprise to myself in the number of species obtained in territory previously worked over by me. One result has been the addition of a dozen or more species, new to science, including those collected last winter. My learned friend, Mr. Ellis, has determined nearly all the species, the exceptions being some *Agarics* and also a few leaf fungi, readily named from examples in the N. A. F. of Ellis. We have worked together, making no definite and final determinations until sure, and even yet have on hand a number of most valuable but to us, as yet, unknown species, some of which may be new; if not, then very rare

ones, peculiar from the semi-tropical character of their habitat, and, beyond doubt, wanderers from even more Southern latitudes. In the genus *Polyporus*, over sixty well-authenticated species are shown, and the list will be increased presently. Intending to publish a complete list of all found, I will begin numbering where I left off in closing last year's work.

GENUS POLYPORUS.

164. *POLYPORUS XANTHUS*, Fr.—Found sparingly on dead pine limbs.
165. *POLYPORUS EPILEUCUS*, F.—On pine stumps; rare.
166. *POLYPORUS SPUMEUS*, Fr.—One fine, large specimen found on a hickory log; rare.
167. *POLYPORUS SCUTELLATUS*, Sw.—On hickory limb; rare.
168. *POLYPORUS CUPULÆFORMIS*, B. & R.—Very large; abundant on dead oak limbs.
169. *POLYPORUS DELECTANS*, Pk.—Only one specimen found, on a dead *Nyssa*. No. 731, probably the above.
170. *POLYPORUS BARBATULUS*, Fr.—On *Juniperus Virginiana*; fine and abundant.
171. *POLYPORUS CINEREUS*, Fr.—Found only on dead *Persea* logs in damp grounds; not plenty; very fine.
172. *POLYPORUS FATISCENS*, B. & R.—On dead limb. Resembles *P. vaporarius* somewhat.
173. *POLYPORUS CURTISHII*, B.—Not common.
174. *POLYPORUS TENELLUS*, B. & C.—On dead limbs; of a pink color; fine pored.
175. *POLYPORUS OBDUCENS*, Pers.—White; fine pored; rare.
176. *POLYPORUS RUFUS*, Schrad.—On *Persea* logs only; rare; very elegant.
177. *POLYPORUS RUFUS*, Var. *lilacinus*, Fr.—Invariably on old *Persea*, and no where else; very beautiful; lilac-tinted.
178. *POLYPORUS TOMENTOCINCTUS*, B. & R.—Approaching *Trametes*; slightly pinkish; rare; not common.
179. *POLYPORUS VULGARIS*, Fr.—Abundant on old logs.
180. *POLYPORUS VULGARIS*, var. *calcea*, Fr.—Rare on *Juniperus*.
181. *POLYPORUS CROCATUS*, Lev.—Found on dead fallen *Myrica* only; not common.
182. *POLYPORUS VINCTUS*, B.—On old log; not abundant; very pretty.
183. *POLYPORUS SUBAURANTIUS*, B. & C.—Rare on old logs.

CORRECTIONS.

In February number of the current volume, p. 19, cancel *Cercospora consobrina*, E. & E., which is only another name and description of *C. rubrotincta*, E. & E., and got into the printer's copy through some oversight. Same page, 10th line from bottom, for *Viguæ* and *Vigua* read *Vignæ* and *Vigna*. Vol. II, p. 88, 20th line from bottom, also read *Vigna* for *Vigua*. On p. 14, Vol. III, 15th line from bottom, for *Brachylospermum* read *Trachelospermum*. On p. 17, 20th line from bottom, the host plant of *Cercospora atromaculans* is *Cassia cora* instead of *Aralia spinosa*. On p. 18, 6th line from bottom, for *Leonotidis* read *Leonitidis* and for *Leonotis* read *Leonitis*. On p. 18, 22d line from top, for *Vitea* read *Vitex* and change *Viteæ* to *Vitæis*. On p. 21, 11th line from top, for *tripida* read *trifida*.

NEW LITERATURE.

BY W. A. KELLERMAN.

"REPORT OF THE BOTANIST TO THE N. Y. AGRICULTURAL EXPERIMENT STATION." By J. C. Arthur. Extracted from the "Fifth Annual Report of the N. Y. Agricultural Experiment Station for 1887." Jan. 30, 1887. Pp. 275—315.

This is a report of work continued in the line of that done in previous years at the same place, and the mycological part is included under the following heads: Pear Blight, Rotting of Tomatoes, Disease of Clover-leaf Weevil, Mildew of Strawberries, Plum-leaf Fungus and a list of important articles on Pear Blight. The first, third and fifth of these articles are illustrated by cuts.

"ADDITAMENTA" to Saccardo's Sylloge, by A. N. Berlese and P. Voglino, contains 484 pages and carries the number of *Pyrenomycetes* up to 7,564, of *Sphaeropsideae* to 4,684 and of *Hyphomycetes* to 3,664. On pp. 7 and 8, Nos. 6,201, 6,202, 6,203 and 6,205, credited to "Ell.," should be "Ell. & Mart." The volume forms a valuable supplement to those already issued. E.

"L. RABENHORSTII FUNGI EUROPÆI ET EXTRAEUROPÆI EXSICCATI."

The 15th and 16th Centuries (Ser. II) of this valuable collection reached us in January, 1887, and contain, as usual, many interesting things. In these two Cents., the various families of fungi are mostly represented. Quite a large proportion of the species are from this country, contributed by various American collectors. Among the new or rare species are *Lycoperdon leprosum*, B. & Rav., from Missouri, a new *Hypocreaceous* fungus, *Balansta pallida*, Winter, growing from the seeds of *Luziola Peruviana* and collected in Brazil by E. Ule, a new species of *Gibbera* (*G. Salisbergensis*, Niessl.), on living leaves of *Erica carnea*, in Austria, and a species of *Dimerosporium* (*D. tropicale*, Speg.), new to this country, collected by the late Dr. Martin in Florida, on living leaves of *Bignonia capreolata*. The species issued in N. A. F., 1297, at least the specimens on *Sabal serrulata*, is proposed as a new species, *Meliola palmicola*, Winter, and is considered as distinct from *M. furcata*, Lev. The well-deserved reputation of Dr. Winter as an authority in mycological matters gives to his collection a special value, and no student of mycology can well afford to be without them. There are, however, one or two of the species that need comment: "*Peziza pellita*, C. & P. (No. 3467) is *Bulgaria rufa*, Schw.; No. 3522, *Dacrymyces confluens*, Karst., can hardly be distinct from *D. corticioides*, E. & E., N. A. F., 1587. Under No. 3525, the opinion is expressed that *Stereum Curtisii*, Berk., may be only a form of *Stereum tabacinum*, Sow. (*Hymenochaete tabacina*, Lev.) It is very doubtful whether those who have observed these species in nature will come to this conclusion. *S. tabacinum* has in the early stage of growth a light yellow margin and the reflexed part is also of a ferruginous yellow and covered with a coat of short tomentum. *S. Curtisii* never has any yellow margin and the reflexed part is nearly glabrous and of the color of weather-beaten wood; the hymenium also is thicker and less cracked and the bristles longer and slenderer ($75-90 \times 8-10 \mu$) and less abundant (sometimes wanting). The bristles in *S. tabacinum* are $70-80 \times 12-15 \mu$. *S. Curtisii*, in the latitude of New Jersey, is not usually as well developed as in Carolina and Florida, the reflexed margin in the more northern specimens being often wanting, while *S. tabacinum* is common in a well-developed state, with distinct reflexed margin as far north as Canada and west to Oregon.

J. B. E.

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No. 4.

ENUMERATION AND DESCRIPTION OF THE SEPTORIAS OF NORTH AMERICA.

BY GEORGE MARTIN, M. D.

This genus was described by Fries, S. M., Vol. 3, p. 480. Its character, as now accepted, is as follows: Perithecia globose or lenticular, thinly membranaceous, pierced with a small opening or fissured, usually developed beneath the epidermis in discolored spots on leaves, through which they generally burst or become erumpent; sporules cylindrical, linear or filiform, pluriseptate or guttulate, rarely entire, hyaline, often discharged in gelatinous threads or masses; basidia small or none.

Descriptions copied without being verified are enclosed in quotation marks.

1. SEPTORIA ACERINA, Pk. 25th Rep. N. Y. S. M., p. 87, Sylloge III, p. 478; Ellis, N. A. F., No. 625.

Spots red to pale brown, often subangular, 3—5 millim. broad; perithecia light brown, lenticular, collapsing, amphigenous, 195—240 μ in diameter; sporules hyaline, filiform, indistinctly septate or continuous, curved, 30—45x2 μ . On leaves of *Acer Pennsylvanicum* and *A. dasycarpum*.

2. SEPTORIA ACERICOLA (Thum.) Sacc. Sylloge, III, p. 507. "*Cryptosporium acericolum*, Thum.

"Perithecia black, subglobose, punctiform, covered, deposited in many minute lines or gregarious; sporules cylindrical, pallid, brown-gray, curved lunate, ends subcontracted and rounded, 27 x 3½—4 μ ." On dry pine leaves. South Carolina.

3. SEPTORIA ACICULOSA, E. & Everhart. Bull. Torrey Bot. Club, II, p. 73; Sylloge III, p. 511.

Perithecia innate, superficial, mostly in clusters of two or three together, black, minute, hypophyllous, 120—135 μ in diameter; sporules hyaline, acicular, continuous, 12—20 x 1—2 μ ; accompanied with *Sphaerella Fragariae*, Tul. On leaves of *Fragaria*. Illinois.

4. SEPTORIA ALBANIENSIS, Thum. Bot. Gazette III, p. 122; Mycotheca Universalis, No. 1294; Sylloge III, p. 501.

"Spots on the upper surface of the leaves irregular, often confluent, variable in size, yellow, with a yellowish or brown margin, on the under surface yellow-gray, indeterminate, margin obscure; perithecia black, punctiform, sublenticular, erumpent, scattered, hypophyllous; sporules rod-shaped, or cylindrical, ends subrotund, curved, 1-septate, hyaline, $30-32 \times 2\frac{1}{2} \mu$." On leaves of *Salix lucida*. New York.

5. SEPTORIA ALBO-NIGRA, B. & C. Sylloge III, 507.

"Spots white, margin brown; perithecia minute; sporules filiform, 55μ long." On living leaves. Alabama.

6. SEPTORIA ALBO-PUNCTATA, Cke. Grev. XII, p. 25; Sylloge III, p. 493; Rav. F. A., p. 510; Ellis, N. A. F., No. 622.

Spots circular, white, 1—2 millim. in diameter, border purple; perithecia dark brown, flattened, epiphyllous, 1—2 in a spot, $100-110 \mu$ in diameter; sporules hyaline, linear, nucleolate or faintly multiseptate, $60-80 \times 2-3 \mu$. On leaves of *Vaccinium arboreum*. South Carolina and Florida.

7. SEPTORIA ALISMATIS, Oudem. Sylloge III, p. 569.

Spots brown, subcircular, gray in the center; perithecia brown, minute, innate, barely visible, mostly hypophyllous; sporules hyaline, cylindrical, 1—3-nucleolate, $16-18 \times 3 \mu$. On leaves of *Alisma Plantago*. Iowa.

8. SEPTORIA AMPELINA, B. & C. Sylloge III, p. 479; Rav. F. A., No. 29; Ellis, N. A. F., No. 623.

Spots brown, angular, often confluent; perithecia dark brown, innate, slightly prominent, poorly defined, amphigenous, $80-100 \mu$ in diameter; sporules hyaline, linear, curved, 3—4-septate, $40-75 \times 3 \mu$. On leaves of *Vitis vulpina*. Texas and South Carolina.

9. SEPTORIA ANGUSTATA (Cke.) Sacc. Sylloge III, p. 569; *Darlucella angustata*, Cke.

"Perithecia — — —; sporules pallid olive, subfusiform, straight or curved, $30 \times 3 \mu$." On *Typha*. North America.

10. SEPTORIA AQUILEGIÆ, E. & K. n. sp.

Spots light brown, subangular, 2—4 millim. broad, border dark brown, often confluent; perithecia brown, lenticular, innate, slightly prominent, scattered, rather numerous, membranaceous, very delicate, amphigenous, $60-80 \mu$ in diameter; sporules hyaline, linear, slightly curved, faintly nucleolate, $25-30 \times 1 \mu$. On leaves of *Aquilegia vulgaris*. Ohio.

11. SEPTORIA ASTRAGALI, Rab. Sylloge III, p. 508; N. A. F., 1135.

Spots gray or pallid, irregular, partially limited by the veinlets, 1—2 millim. broad, often confluent; perithecia pale yellow to brown, flattened, innate, slightly prominent, very delicate, 2—4 in a spot, epiphyll-

lous, 150—250 μ in diameter; sporules hyaline, filiform, flexuous, 6—9-septate, 80—100 x 3 μ . On leaves of *Lathyrus ochroleucus*, Minnesota, *L. maritimus*, Massachusetts, a variable species.

12. SEPTORIA ASTRAGALICOLA, Pk. Torrey Bull. XII, p. 33.

“Spots indefinite or obsolete; perithecia black, hypophyllous, lenticular, 127—177 μ broad; sporules subcylindrical, straight or slightly curved, obtuse, 40—60 x 5—6 μ , sometimes plurinucleate, oozing out in whitish or faintly pinkish masses or tendrils. On leaves of *Astragalus*. Arizona. Differs from *L. Astragali* in the situation of the perithecia and character of the spots.”

13. SEPTORIA ATROPURPUREA, Pk. 33d N. Y. S. Report; Sylloge III, p. 549.

Spots subcircular, sometimes confluent, purple-brown on the upper surface, pallid in the centre, pale purple on the under surface, with the center yellow-brown; perithecia few, brown or pallid, globose, epiphyllous, 60 μ ; sporules hyaline, filiform, straight or curved, 50—100 x 2 μ . On living leaves of *Aster macrophyllus* and *A. cordifolia*. New York and Pennsylvania.

14. SEPTORIA BACILLIGERA, Winter. Jour. of Mycol. I, p. 122.

“Spots small, subangular or irregular, at times confluent, white, dry, mostly one millim. in diameter, surrounded by a black line; perithecia scattered, minute, globose, black, membranaceous, stomatous, 80—90 μ in diameter; sporules numerous, hyaline, rod-shaped, often slightly enlarged at one end, mostly straight, 1—3-septate, at last constricted at the septa, 9—23 x 3—3½ μ .” On leaves of *Ambrosia trifida*. Missouri.

15. SEPTORIA BAPTISLÆ, Cke. Sylloge III, p. 508; Rav. F. A., No. 30; Ellis, N. A. F., No. 624.

Spots suborbicular, purple; perithecia brown, innate, slightly prominent, mostly hypophyllous, 75—90 μ in diameter; sporules hyaline, linear, straight or curved, nucleolate, 45—60 x 3 μ . On leaves of *Baptisia perfoliata*. South Carolina.

16. SEPTORIA BESSEYI, Pk. Bull. Torrey Bot. Club VI, p. 77; Sylloge III, p. 495.

“Hypophyllous; perithecia more or less abundantly scattered over the whole lower surface of the leaf, slightly prominent, at first pale ferruginous or subochraceous, then black; sporules large, cylindrical, obtuse, moderately curved, usually containing several nucleoli, 40—55 x 4 μ , oozing out in whitish or pinkish-white masses.” On living leaves of *Fraxinus*. Iowa.

17. SEPTORIA BETULICOLA, Pk. 34th N. Y. S. Rep., p. 44; Sylloge III, p. 506.

Spots red-brown, round or somewhat angular, pallid in the center, 1—2 millim. broad; perithecia black, subglobose, innate, slightly prominent, mostly hypophyllous, scattered, 75—80 μ ; sporules hyaline, filiform, curved, entire, 30—45 x 1 μ . On living leaves of *Betula*. New York.

18. SEPTORIA BIDENTIS, Sacc. Sylloge III, p. 547.

Spots pallid, subrotund, dry, one millim. in diameter, border brown, narrow, raised, distinct; perithecia brown, innate, becoming visible, scarcely prominent, 2—5 in a spot, epiphyllous, 65—75 μ in diameter; sporules hyaline, filiform, flexuous, indistinctly 1—3-septate, 23—26 x 1—1½ μ ("30—35 x 1—1½ μ ," Sacc.) On leaves of *Bidens bipinnata*. Missouri.

19. SEPTORIA BRUNELLÆ, E. & Hol. Jour. of Myc. I, p. 6; Ellis, N. A. F., No. 1606.

Spots dark rusty brown, irregular and variable in size, border raised, narrow; perithecia black, slightly prominent, thickly scattered, epiphyllous, 100—130 μ in diameter; sporules hyaline, with a brownish tint, linear, clavate, multiseptate, nearly straight, 40—75 x 1½—2 μ . On leaves of *Brunella vulgaris*. Iowa.

20. SEPTORIA CACALIÆ, E. & K. Am. Nat. XVII, p. 1164; Ellis, N. A. F., No. 1132 and 1610.

Spots rusty brown or gray in the center, border raised, brown, 2—5 millim. broad; perithecia black, lenticular, innate, slightly prominent, scattered, mostly epiphyllous, 90—100 μ in diameter; sporules hyaline, linear, nearly straight, faintly nucleolate, 30—45 x 1½—2 μ . On leaves of *Cacalia tuberosa* and *C. atriplicifolia*. Kansas to Florida.

21. SEPTORIA CAMPANULÆ (Lev.) Ellis, N. A. F., No. 1616; Sylloge III, p. 544. *Ascospora Campanulæ*, Lev.

Spots pallid, dry, subangular, partially limited by the veinlets, often confluent, 3—6 millim. broad; perithecia brown, lenticular, slightly prominent, clustered, amphigenous, very delicate, membranaceous, 60—90 μ in diameter; sporules hyaline, filiform, 2—3-septate, 21—24 x 1 μ . On leaves of *Campanula Americana*. Kansas.

22. SEPTORIA CANNABIS (Lasch.) Sacc. *Septoria cannabina*, West.; *S. cannabina*, Pk., 35th Rep., p. 137; *Ascochyta Cannabis*, Lasch.; Sylloge III, p. 557; Ellis, N. A. F., No. 1146.

Spots variable, dry, dull yellow; perithecia often epiphyllous, densely gregarious, innate, globose-depressed, 80—90 μ in diameter; sporules hyaline, linear, straight or curved, obscurely 1—3-septate, "45—55 x 2—2½ μ ." On leaves of *Cannabis sativa*. Kentucky.

23. SEPTORIA CELTI-GALLÆ, Gerard. Bull. Torrey Bot. Club VI, p. 78; Sylloge III, p. 499.

"Spots none; perithecia very small, black, immersed, scattered; sporules none." On leaves of *Celtis occidentalis*. New York.

24. SEPTORIA CEPHALANTHI, E. & K. Bull. Torrey Bot. Club II, p. 115; Ellis, N. A. F., No. 1611.

Spots red-brown, circular, 1½—3 millim. in diameter, border narrow, slightly raised; perithecia dark brown, subglobose, slightly prominent,

mostly clustered in the center of the spots, epiphyllous, 120—130 μ in diameter; sporules brownish, filiform, nearly straight, continuous, 12—20 x 1 μ . On leaves of *Cephalanthus occidentalis*. Kansas.

25. SEPTORIA CERASTII, Rob. & Desm. Sylloge III, p. 518; N. A. F., No. 1139.

Spots pallid, large; perithecia brown, subglobose, erumpent, amphigenous, numerous, 135—140 μ in diameter; sporules hyaline, filiform, one end a little enlarged, entire, 35—40 x 1 μ . On *Cerastium viscosum*, *C. vulgatum* and *C. oblongifolium*. Kentucky.

26. SEPTORIA CERASINA, Pk. 29th Rep. N. Y. S. Mus., p. 48; Sylloge III, p. 489; Ellis, N. A. F., No. 1609.

Spots red-brown, turning light brown or pallid in the center, often confluent, subangular, 1—3 millim. in diameter; perithecia obsolete; acervuli flattened, subepidermal, mostly hypophyllous, 300—400 μ in diameter; sporules subhyaline, cylindrical or subfusiform, ends subacute, one or more septate, curved, 40—60 x 2½ μ , exuded in light amber-colored masses, or white at first. On leaves of *Prunus domestica* and *P. serotina*. New York. This probably should be transferred to *Phleospora*.

27. SEPTORIA CEUTHOSPOROIDES (Cke. and Hark.) *Cryptosporium ceuthosporoides*, Cke. & Hamess. Grev. IX, p. 127; Sylloge III, p. 490.

“Perithecia flat, brown, entire, thin, fissured above; sporules hyaline, fusiform, curved, 18—20 x 3 μ .” On dead leaves of *Eucalyptus*. California.

(To be continued.)

NEW SPECIES OF FUNGI.

BY J. B. ELLIS AND B. M. EVERHART.

ASTERINA INQUINANS, E. & E.—On dead leaves of *Sabal Palmetto*, Louisiana, July, 1886. Rev. A. B. Langlois. Perithecia scutelliform, black, umbonate, of radiate-cellular structure, the marginal cells subelongated and slightly enlarged at their extremities; asci ovate or obovate, contracted at the base into a short stipe, 35—40 x 18—22 μ ; sporidia irregularly crowded, ovate-elliptical or oblong-elliptical, yellowish and faintly uniseptate(?). The perithecia are thickly scattered over both surfaces of the leaf and look much like masses of exuded spores of some *Pestalozzia* or *Melanconium*.

PHYLLACHORA OXALINA, E. & E.—On living leaves of *Oxalis corniculata*, Faulkland, Del., August, 1885. A. Commons, No. 117. Gregarious, tuberculiform, minute (½ millim.); stylospores oblong-fusoid, hyaline, 2-nucleate, then 1-septate, 7—8 x 2—3 μ . The part of the leaf occupied by the fungus turns brown and dries up.

VALSA MAGNISPORA, E. & E.—On dead maple limbs, Plainfield, N. J. G. F. Meschutt, July, 1886. Perithecia buried in the inner bark, not penetrating to the wood nor circumscribed by any black line, 6—10 in a cluster, globose-ovate, about one fourth millim. in diam., contracted above into short necks which burst in a cluster through the epidermis but project only slightly above it, their apices (ostiola) hemispherical, black, smooth and shining, with a minute central pore and sometimes lightly umbilicate; asci sessile, oblong-cylindrical, 100—120 x 18—22 μ ; sporidia biseriate, oblong-fusoid, hyaline, 1-septate, slightly curved, 25—35 x 9—11 μ . We have not seen a specimen of *Diaporthe Aceris*, Fckl., but that is said to have asci only 60 x 8 μ and sporidia 14 x 4 μ and can hardly be the same as this.

MELANCONIS DECORAENSIS, Ell., var. *major*.—On dead birch limbs, Plainfield, N. J. (G. F. Meschutt). Has the sporidia longer (18—26 x 8—10 μ) and mostly biseriate, but does not differ otherwise from the original specimens from Iowa. When well matured, the ostiola in both are distinctly quadrisulcate.

DIATRYPELLA HERBACEA, E. & E.—On dead herbaceous stems (*Ambrosia trifida*?) September, 1886. Langlois, No. 505. Stroma tuberculiform, 1—2 millim. in diam., white inside, tinged with yellow above but black externally; perithecia ovate-globose, about one third millim. in diam., rather abruptly contracted above into a short, narrow neck, expanded at the surface of the stroma with a broad, obtuse, quadrisulcate ostiolum; asci, including the slender base, 100—120 x 10—12 μ ; paraphyses soon disappearing; sporidia crowded in the upper half of the asci, numerous pale yellowish, cylindrical, curved, 7—8 x 1—1½ μ . On the same stems was a form of *Calosphaeria microtheca*, C. & E., with scattered or subseriate beaked perithecia, having fasciculate asci about 20 x 3½—4 μ , truncate above and sporidia 3½—4½ x ½ μ .

DIATRYPELLA RAMULARIS, E. & E.—On dead branches of *Lonicera Japonica*, Pointe à la Hache, La., December, 1886. Langlois, No. 861. Stroma tuberculiform, 1—2 millim. in diam., bursting out through longitudinal cracks in the bark, penetrating to the wood, which is marked with a black, circumscribing line, subtruncate above, dirty white within; perithecia 4—12 in each stroma, globose, with a short neck, walls thick and coriaceous; ostiola only slightly prominent, flat, 4—5-stellate-cleft, finally broadly perforated; asci broad, clavate, 90—110 x 12—15 μ ; sporidia many, allantoid, yellowish, moderately curved, 6—10 x 1½ μ .

DIATRYPE SPHÆROSPORA, E. & E.—On dead shoots of *Magnolia glauca*, Newfield, N. J., June, 1878. Stroma formed of the scarcely altered substance of the bark, erumpent but not very prominent, surrounded by the ruptured epidermis, small (½—1 millim.); perithecia in a single layer, 3—12, black, membranaceous, minute (one sixth to one fifth millim.), their smooth, black, obtusely conic ostiola dotting the surface of the stroma; asci cylindrical, spore-bearing part 30—35 x 3 μ , with a slender thread-like base about 20 μ long; paraphyses not observed;

sporidia uniseriate, yellowish-hyaline, eight in an ascus, globose, three μ in diam. Outwardly, this is scarcely distinguishable from *D. minima*, E. & E. (JOURN. MYCOL., I, p. 91), but the marked difference in the sporidia seem to entitle it to specific rank. The stroma in some of the specimens is limited by a black line as in *D. minima*, but in others not.

EUTYPA ECHINATA, E. & E.—On dead branches of *Fraxinus*, Plaquemines, Co., La., December, 1886. Langlois, No. 952. Stroma surrounding the branches and extending along them for many inches, continuous or interrupted, penetrating (but not discoloring) the wood for about one millimeter and bounded by a thin black layer which, in a transverse section, appears as a black line. The epidermis is not discolored, but when this has disappeared, the exposed surface of the inner bark is seen to be thickly covered with snuff-brown, punctiform tufts of hyphæ about 25 or 30 μ high, of a pale brown color and much resembling the tufted hyphæ of some *Cercospora*, but, from the specimens seen, we have not been able to make out the conidia; perithecia globose, $\frac{1}{3}$ — $\frac{1}{2}$ millim. in diam., with thick, coriaceous walls and, when mature and empty, black and shining inside, buried in the lower stratum of the inner bark and penetrating the wood more or less—sometimes entirely buried in it; ostiola cylindrical, rough, projecting about one millim., their apices rounded, smooth and black and pierced with a small, round aperture; asci clavate, 12—15 x 4 μ (spore-bearing part), with a slender, filiform base of about the same length and without paraphyses; sporidia allantoid, subhyaline, 2-nucleate, curved, eight in an ascus, about 4 x $\frac{3}{4}$ —1 μ .

ANTHOSTOMA SAPROPHILUM, E. & E.—On rotten maple wood, Newfield, N. J., May, 1876. Stroma effused, blacking the surface of the wood but not discoloring it inside, but limited by a black circumscribing line, forming black, subelongated, subconfluent, indefinitely-limited spots $\frac{1}{2}$ —1 cm. or more in extent; perithecia membranaceous, globose ($\frac{1}{3}$ — $\frac{1}{2}$ millim.), buried in the wood and irregularly arranged in groups of 6—10 or more, with their hemispheric-conic ostiola distinctly prominent and finally pierced with a small, round opening, but not radiate-sulcate; sporidia elliptical, pale brown, 1—2-nucleate, uniseriate, 5—6 x 2 $\frac{1}{2}$ —3 μ . Much resembles *A. melanotes*, B. & Br., but readily distinguished by its much smaller sporidia. We have not seen *Sphaeria polynesia*, B. & C., but as far as we can judge from the brief description of that species, this is different.

ANTHOSTOMELLA MINOR, E. & E.—On petioles of *Sabal serrulata*, Florida. W. W. Calkins, No. 746. Perithecia scattered, one third millim. in diam., subglobose, with the upper part subconic and prominent, with a rather acute, papilliform ostiolum; asci linear, 65—75 x 5 μ ; sporidia uniseriate, opaque, 2—3-nucleate, subinequilateral, 7—8 x 2 $\frac{1}{2}$ —3 μ . The surface of the matrix, in the specimens seen, was covered with a thin black crust, but whether this has any connection with the perithecia, we could not say.

ANTHOSTOMELLA MELANOSTICTA, E. & E.—On dead leaves of *Sabal Palmetto*, Louisiana, December, 1886. Langlois, No. 830. Perithecia gregarious or scattered, buried in the parenchyma of the leaf with their black, dot-like ostiola barely projecting through the epidermis, which is not at all blackened or discolored; asci 80—110 x 12—15 μ ; sporidia subbiseriate, elongated-elliptical and subinequilateral, brown, continuous, 19—22 x 7—9 μ , with a thin, hyaline envelope at first.

LIPTOSPHERIA FRAXINI, E. & E.—On living leaves of *Fraxinus Americana*, Columbia, Mo., August, 1886. B. T. Galloway, No. 125. Spots amphigenous, rusty below, dirty white above, with a rusty brown border, small, orbicular (1 millim.) or elongated, 2—3 millim. and narrow; perithecia black, epiphyllous, few, small (75 μ), erumpent, indistinctly pierced above and with a rudimentary mycelium around the base; asci clavate-cylindrical, 55—70 x 8—10 μ ; sporidia biseriate, fusoid, somewhat curved, yellowish, nucleate, becoming 3—5-septate (mostly 4-septate), constricted at the middle septum when mature and sometimes slightly at the others, 20—25 x 3½—4 μ .

LOPHIOSTOMA EROSUM, E. & E.—On decaying wood of *Salix*, Vine-land, N. J. Perithecia buried in the substance of the wood, globose, ¼—½ millim. in diam.; ostiola erumpent, narrow, only slightly prominent; asci clavate-cylindrical, 90—100 x 12—15 μ , with abundant filiform paraphyses; sporidia subbiseriate above, oblong-fusoid or subnavicular, about 5-septate, hyaline at first, then yellowish and finally nearly opaque, mostly 20—25 x 7—8 μ , with a shrivled appearance. The perithecia are greedily eaten out by a small beetle. Allied to *L. scelestum*, C. & E., but smaller sporidia. Differs from *L. macrostomoides*, DeNot, in its immersed and smaller perithecia and its somewhat smaller sporidia.

LOPHIOSTOMA LANGLOISII, E. & E.—On bark of decaying *Salix nigra*, lying on damp ground, Point a' la Hache, La., December, 1886. Langlois, No. 902. Perithecia gregarious, subconic, three fourths millim. in diam., about half buried in the bark, the projecting part dull black, roughish, with a narrow, more or less compressed, prominent ostiolum; asci subcylindrical, 110—120 x 12—15 μ , with abundant paraphyses; sporidia mostly biseriate, fusoid, 3-septate and slightly constricted at the septa, brown, slightly curved, each cell with a large nucleus, 34—40 x 7—8 μ .

LOPHIOSTOMA (LOPHIOSPHERIA) RADICANS, E. & E.—On decorticated, decaying stems of *Rhus radicans*, Newfield, N. J., July, 1878. Perithecia scattered, small (one sixth millim.), buried in the wood, except the narrow, compressed, erumpent ostiolum; asci subcylindrical, 90—110 x 10—12 μ (spore-bearing part 75—80 μ long), surrounded and overtopped by abundant, thread-like paraphyses; sporidia biseriate, fusiform, 3-septate, hyaline, slightly curved and mostly constricted at the middle septum, 15—20 x 4—5 μ .

LINOSPORA PALMETTO, E. & E.—On dead places in living leaves of *Sabal Palmetto*, Point a' la Hache, La., December, 1886. Langlois, No. 869. Perithecia globose, about one third millim. in diam., immersed, with the papillose ostiolum erumpent and included in a superficial, depressed-conic, cap-like stroma nearly as broad as the perithecia and around which the epidermis of the leaf is blackened as is also the parenchyma of the leaf around the perithecia; asci lanceolate, $75-80 \times 8-10 \mu$, with abundant paraphyses; sporidia eight in an ascus, linear fusoid, yellowish nucleate, acute, $40-50 \times 2-2\frac{1}{2} \mu$. The perithecia are mostly in subelongated spots of a paler color than the surrounding part of the leaf.

SPHÆRELLA SERRULATA, E. & E.—On dead stems of *Sabal serrulata*, Florida, January, 1887. W. W. Calkins. Perithecia minute, covered by the cuticle, which is blackened over them, rather prominent, with an acute, papilliform ostiolum, mostly collected in groups of 6—12 or arranged in a seriate manner; asci oblong-lanceolate, $35 \times 7-8 \mu$; sporidia biseriate, oblong-fusoid, 2-nucleate, hyaline, $6-8 \times 2\frac{1}{2} \mu$, ends rather obtuse. Differs from *S. sabaligena*, E. & E., in its smaller, grouped perithecia and in its smaller sporidia without septa.

SPHÆRELLA ROSIGENA, E. & E.—On living leaves of cultivated roses, Louisiana. Langlois, No. 689. Maculicola; spots amphigenous, reddish-brown, with a purplish border, definite, 3—4 millim. in diam.; perithecia epiphyllous, thickly scattered over the spots, minute ($60-75 \mu$), partly erumpent, subastomous, black; asci subclavate-oblong, $25-30 \times 8-10 \mu$; sporidia biseriate, clavate-oblong, hyaline, 1-septate, $10-12 \times 2 \mu$, ends subacute. Not to be confounded with *Sphærella (Laestadia) Rosæ*, Auersw.

SPHÆRELLA SICYICOLA, E. & E.—On living leaves of *Sicyos angulata*, Missouri. B. T. Galloway, No. 51. Spots amphigenous, small (1—2 millim.), dirty white, suborbicular or partly limited by the veinlets of the leaf, thin and transparent in the center; perithecia few, 1—3, often only one in the center of a spot, epiphyllous, black and subshining, about 100μ in diam., sublenticular, with a rather broad perforation above, structure coarsely cellular; asci cylindrical-oblong, $40-50 \times 6-7 \mu$, sessile; sporidia biseriate, ovate-oblong, hyaline, uniseptate and somewhat constricted, $8-11 \times 3-3\frac{1}{2} \mu$, ends rounded or subacute.

We have received from Mr. Commons, Delaware, specimens of what must be the *Sphæria Zizaniæ*, Schw., Syn. N. Am., 1750. On languishing leaves of *Zizania aquatica*. Perithecia immersed and quite evenly scattered, not seriate; asci oblong-cylindrical, turgid, $45-55 \times 10-12 \mu$; sporidia biseriate, clavate-oblong, 1-septate and constricted, hyaline, straight or slightly curved, $15-20 \times 5-6 \mu$. The species belongs in *Sphærella*. The specimens of *Sphæria Zizaniæ*, Schw., in Herb. Schw., are sterile and poor, but the Delaware specimens appear to be that species.

NOTES ON FLORIDA FUNGI.--No. 12.

BY W. W. CALKINS, CHICAGO, ILLINOIS.

184. *HYDNUM MEMBRANACEUM*, Bull.—Very abundant on the under side of logs. The color varies from pink to violet and gray, when fresh.

185. *HYDNUM ALUTACEUM*, Pers.—Not common; on rotten wood.

186. *HYDNUM XANTHUM*, B. & C.—On pine bark; not abundant.

187. *HYDNUM GELATINOSUM*, Pers.—Found on a rotten pine log; very fine.

188. *HYDNUM STEVENSONI*, B. & Br.—On pine logs; common.

189. *HYDNUM ZONATUM*, Batsch.—On the ground in old plantation.

Besides the foregoing, I also found those species enumerated by me in Vol. II, *JOURN. MYCOL.*, more or less abundantly.

190. *KNIFFIA CANDIDISSIMA*, B. & K.—Found plentifully on fallen cedar trees; very fine and reminds one of *Grandinia granulosa*, but the granules are more scattered.

191. *HYSTERIUM LINEOLATUM*, Cke.—Abundant on stems of *Sabal*.

192. *PENICILLIUM GLAUCUM*, Lk.—Common on old *Polyporus*.

193. *DIPLOCLADIUM MELLEUM*, B. & Br.—On *Stereum subpileatum*.

194. *CORTICIUM CROCICREAS*, B. & C.—On the under side of old limbs on the ground; color yellow.

195. *CORTICIUM EFFUSCATUM*, C. & E.—On old *Persea*; cream color.

196. *CORTICIUM ALUTARIUM*, B. & C.—On old limbs; not common.

197. *CORTICIUM CINEREUM*, Pers.—Occasional on old limbs.

198. *CORTICIUM PUBERUM*, Fr.—On oak limbs; white color.

199. *CORTICIUM RADIOSUM*, Fr.—Ochre-red, and formerly referred to as a variety of *C. ochroleucum*; not common.

200. *CORTICIUM ECHINOSPERMUM*, Ell.—On pine logs.

201. *CORTICIUM CALCEUM*, P.—Rare on red cedar logs,

202. *CORTICIUM EPICHLORUM*, B. & C.—Rare on old limbs.

Besides the above, we have other species not yet identified.

203. *NECTRIA LACTEA*, Ell. & Morgan.—Found by Mr. Ellis on old *Stereum subpileatum* sent by me; common.

204. *PEZIZA SCUTELLATA*, L.—On old *Persea*; deep red and about the size of a half dime.

205. *ASTERINA INQUINANS*, E. & M.—Abundant on *Sabal* stems.

206. *LENTINUS VILLOSUS*, Fr.—Common on old logs.

207. *MERULIUS TREMELLOSUS*, Schrad.—Rare on old pine bark.

208. *HYPOXYLON MINIATUM*, Cke.—Not common; on dead wood.

209. *HYPOXYLON PERFORATUM*, Sw.—On limbs and *Sabal* stems.

210. *HYPOXYLON JECORINUM*, B. & R.—Very rare; on a dead limb.

211. *IRPEX CORIACEUS*, B. & R.—Found on old pine limbs.

212. *IRPEX MOLLIS*, B. & C.—Common on old trees.

213. *IRPEX SINUOSUS*, Fr.—Occasional on old gum trees.

214. *POROTHELIUM LACERUM*, Fr.—On old log; not common.

215. *LEOTIA CHLOROCEPHALA*, Sw.—A beautiful species; found growing abundantly in old worn out plantation.

216. *USTULINA VULGARIS*, Tul.—In decayed places on living oaks.

NEW LITERATURE.

BY W. A. KELLERMAN.

"NEW BRITISH FUNGI." By M. C. Cooke. Grevillea, March, 1887.

"BRITISH PYRENOAMYCETES." By G. Massee. 1. c.

"SYNOPSIS PYRENOAMYCETUM, CONTINUED." 1. c.

"FUNGI NOVI BRASILIENSIS." Auctore Dr. G. Winter. 1. c.

"SOME AUSTRALIAN FUNGI." By M. C. Cooke. 1. c.

"ON CERTAIN CULTURES OF GYMNOSPORANGIUM, WITH NOTES ON THEIR RÆSTELIÆ." By Roland Thaxter. Presented, Dec. 8, 1886. Proceedings of the American Academy of Arts and Sciences.

Dr. Farlow's "Notes on Some Species of Gymnosporangium and Chrysomyxa of the U. S.," communicated to the Academy in February, 1885, is here supplemented by an account of farther experiments while the author was studying in Dr. Farlow's laboratory. The paper covers nine pages, gives an account in detail of the work, comments on the confusion that exists as to identity and distinctions of the species of *Ræstelia* and concludes with the summary of the species of *Gymnosporangia* and their *Ræsteliæ* as follows: *G. conicum*-*R. cornuta*; *G. clavipes*-*R. aurantiaca*; *G. clavariceforme*-*R. lacerata*; *G. macropus*-*R. pyrata*; *G. biseptatum*-*R. botryapites*; *G. Ellisii*-*R. transformans* (probably); and *G. globosum* (?)

"UEBER DIE INFECTION DER NÄHRPFLANZEN DURCH PARASITISCHE PEZIZA-ARTEN." Von J. H. Wakker. Botanisches Centralblatt, No. 10 and 11, 1887.

"LE PHALLUS ET LA MORILLE." Le Naturaliste Canadien. Fevrier, 1887.

"RABENHORST'S KRYPTOGAMEN-FLORA." PILZE von Dr. G. Winter. 27. Lieferung. Schluss der II. Abtheilung.

This Lieferung, pp. 865-928, concludes the second part, which contains the *Ascomycetes*. It is accompanied by a title page, preface, table of contents and genera-index. The full index to this volume, as well as the next Lieferung, is to appear very soon.

"FRUIT OF THE FUNGUS UNCINULA FLEXUOSA, ON THE LEAVES OF THE HORSE-CHESTNUT." By J. L. Zabriskie. Journal of the New York Microscopical Society, December, 1886.

"FRAGMENTA MYCOLOGICA XXI." Auctore, P. A. Karsten, Hedwigia, November and December, 1886.

"EXOTISCHE PILZE IV." Von Dr. G. Winter, Hedwigia, January and February, 1887.

CORRECTION.

Agaricus agglutinatus, No. 22, on page 31, should be *Agaricus agglutinatus*.

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MANHATTAN, KANSAS, MAY, 1887.

No. 5.

ENUMERATION AND DESCRIPTION OF THE SEPTORIAS OF NORTH AMERICA.

BY GEORGE MARTIN, M. D.

(Continued from page 41.)

28. SEPTORIA CHIONANTHI, Cke. Hedwigia, 1878, p. 38; Sylloge III, p. 496; Rav. F. A. N., 25.

Spots none or obliterated; perithecia dark or nearly black, subglobose, semi-immersed, clustered, numerous, hypophyllous, $100\ \mu$ in diam.; sporules hyaline, linear, obtuse, $8 \times 1-1\frac{1}{2}\ \mu$. On leaves of *Chionanthus Virginica*. South Carolina.

29. SEPTORIA CIRRHOSA, Winter. Journ. Mycol. I, p. 122.

"Spots scattered or confluent, subrotund or irregular, pale brown, whitish in the center, margin yellowish, indeterminate, seven millim. broad; perithecia amphigenous, loosely gregarious, semi-immersed, depressed-globose, opening by a broad pore, black, $100-130\ \mu$ in diam.; sporules cylindrico-filiform, often flexuose, acute at both ends, hyaline, tinted with green, mostly 3-5-septate, $30-45 \times 2-2\frac{1}{2}\ \mu$." On living leaves of *Staphylea trifolia*, Missouri.

30. SEPTORIA CIRSI, Niessl. Sylloge III, p. 550.

Spots brown, dark gray in the center, subrotund, epiphyllous, 3-5 millim. broad; perithecia brown, membranaceous, innate, slightly prominent, scattered or "gregarious," $100\ \mu$ in diam.; sporules hyaline, linear, straight or subflexuous, ends obtuse, "8-12 septate, $40-80 \times 1\frac{1}{2}-2\ \mu$." On leaves of *Cirsium altissimum*, Delaware.

31. SEPTORIA CONSIMILIS, E. & M. Journ. Mycol. I, p. 100; Ellis, N. A. F., No. 1,602.

Spots brown, dead, irregular, $\frac{1}{2}-1$ cm. in diam., border indefinite; perithecia brown, subglobose, innate, scattered, amphigenous, $90-100\ \mu$; sporules hyaline, filiform, multinucleate, slightly curved, ends obtuse, $30-45 \times 2-2\frac{1}{2}\ \mu$. On cultivated lettuce, New York.

32. SEPTORIA CONSOCIA, Pk. Bot. Gaz. V, p. 34; Sylloge III, p. 521.

"Perithecia closely gregarious, amphigenous, black, 65—75 μ in diam.; sporules filiform, nearly straight, 15—20 μ long. On living and languishing leaves of *Polygala senega*, associated with an *Aecidium*." Michigan.

33. SEPTORIA COPTIDIS, B. & C. N. A. Fungi, 436; Sylloge III, p. 526.

"Spots reddish, with a red margin; sporules filiform, straight, 25 μ long." On *Coptis*, Wisconsin.

34. SEPTORIA CORNICOLA, Desm. Sylloge III, p. 492.

Spots grey, nearly round, 4—5 millim. broad, border dark purple; perithecia dark brown, globose-depressod, scattered, mostly epiphyllous, 100—110 μ in diam.; sporules hyaline, cylindrical, curved, 2—4-septate, 30—40 x 2—2½ μ . On *Cornus*. Pennsylvania, Delaware and Missouri.

35. SEPTORIA CORYLINA, Pk. 34th Rep. S. Mus., p. 44; Sylloge III, p. 503.

"Spots suborbicular, scattered, brown or red brown, border grey-brown; perithecia few, minute, dark brown, very prominent, epiphyllous; sporules filiform, curved, hyaline, 38—45 μ long." On *Corylus rostrata*. New York.

36. SEPTORIA CRYPTOTÆNIÆ, E. & Rau, n. s.

Spots white, thin, irregular, one millim. broad, border obsolete; perithecia brown, subglobose, very delicate, amphigenous, 90—95 μ in diam.; sporules hyaline, tinted with green, cylindrical, ends slightly acute, curved, 24—30 x 1½ μ . On *Cryptotænia Canadensis*. Pennsylvania.

37. SEPTORIA CUCURBITACEARUM, Sacc. Sylloge III, p. 527.

"Spots white, subcircular or slightly angular, dry; perithecia lenticular, with a broad aperture, 70—90 μ in diam.; sporules narrowly vermicular, tortuous, 60—70 μ , septate, hyaline." On languishing leaves of *Cucurbita*. North America.

38. SEPTORIA CURTISIANA, Sacc. Sylloge III, p. 561; *Septoria Tritici*, B. & Curt.

"Perithecia hysteroform in pallid spots on the stems; sporules slender." On culms of *Triticum*. Probably a *Rhabdospora*. Pennsylvania.

39. SEPTORIA DALIBARDÆ, Pk. 38th Rep. N. Y. S. Mus., p. 97; Ellis, N. A. F., No. 1,608.

Spots brown, subrotund, whitish or cinereous in the center, 1—2 millim. broad, border reddish-brown; perithecia black, subglobose, depressed, few in a spot, epiphyllous, 75—80 μ in diam.; sporules hyaline, filiform, nearly straight, 45—60 x 1 μ , "38—50 μ long," Pk. Differs from *S. Woldsteiniae* in the spores, which are much longer. On leaves of *Dalibarda repens*. New York.

40. SEPTORIA DENTARIÆ, Pk. 38th Rep. N. Y. S. Mus., p. 97.

Spots large, subcircular, indefinite, greenish; perithecia black, very delicate, slightly prominent, numerous, epiphyllous, 95—100 μ in diam.; sporules hyaline, linear, nearly straight, 15—30 x 1 μ , oozing out in yellowish or amber-colored threads. On leaves of *Dentaria diphylla*. New York.

41. SEPTORIA DIERVILLÆ, E. & E. Journ. Mycol. I, p. 44, March, 1885.

Spots dark brown, 2—3 millim. broad, border mostly thick, swollen, raised more on the upper surface, more or less shaded, purplish black; perithecia hypophyllous, small, black, innate, erumpent, 65—90 μ in diam.; sporules hyaline, with a slight tint of green, filiform, often strongly curved, nucleolate, 25—35 x 1—1½ μ . On *Diervilla trifida*. Massachusetts.

S. Diervillæ, Pk., 38th Rep. N. Y. State Mus., p. 98, is apparently the same, but the 38th Rep. was not given to the public till 1886.

42. SEPTORIA DIFFORMIS, C. & Pk. 29th Rep. N. Y. S. Mus., p. 48; Sylloge III, p. 493.

“Spots suborbicular, brown; perithecia aggregated, black, amphigenous; sporules profuse, linear, straight or curved, hyaline, 15 μ long, ejected in white or glaucous masses.” On living leaves of *Vaccinium Pennsylvanicum*. New York.

43. SEPTORIA DOLICHI, B. & C., N. Am. Fungi, No. 449; Sylloge III, p. 509.

“Spots white, margin broad, yellow; sporules straight, subfusiform, 3-septate, 40 μ long.” On leaves of *Dolichos*. South Carolina.

44. SEPTORIA DRYINA, Cke. Grev. XII, p. 25; Sylloge III, p. 505; Rav., F. A., No. 783.

Amphigenous; spots orbicular, white, one millim. broad, border red, narrow; perithecia few, punctiform, black, 80—130 μ in diam.; sporules linear, curved, plurinucleate, hyaline, 50—60 x 1½ μ . On leaves of *Quercus falcata*. South Carolina.

45. SEPTORIA EMACULATA, Pk. & Clinton. N. Y. S. Rep.; Sylloge III, p. 510.

“Perithecia broad, scattered, prominent, black; sporules filiform, curved or flexuous, nucleolate, 50—87 μ long.” On living leaves and pods of *Lathyrus palustris*. New York.

46. SEPTORIA EQUISITI, Desm. Sylloge III, p. 576.

Spots light grey, oblong, 2 x 1 millim., sometimes confluent, border brown, narrow; perithecia few, scattered, flattened, very delicate or wanting, innate, covered, 250—500 μ in diam.; sporules hyaline, subfusiform, 1—3-septate or pluriguttulate, mostly curved, 26—40 x 3—4 μ , exuded in light, amber-colored masses. On *Equisetum*. Probably a *Phleospora*. Iowa.

47. *SEPTORIA ERIGERONTIS*, Pk. 24th Rep. N. Y. S. M., p. 87; Grev. III, p. 8; Sylloge III, p. 547; Ellis, N. A. F., No. 1,129.

Spots pallid to pale brown, round or irregular, 2—4 millim. broad, border brown, raised; perithecia black, subglobose, stomatous, clustered, prominent, epiphyllous, but visible on the under surface, 80—90 μ in diam.; sporules hyaline, filiform, subflexuous, entire, 35—40 x 1½ μ . New York. On *Erigeron*; *Septoria erigerontes*, Pk., No. 410 and *S. Erigerontis*, B. & C., No. 411; Sylloge III, p. 547, appear to be identical.

48. *SEPTORIA EXAMINANS*, B. & C. Grev. III, p. 8; Sylloge III, p. 483.

“Perithecia gregarious, punctiform, closely dotting portions of the whitened leaves; sporules filiform, flexuous, 25 μ or more in length. On *Ilex*. North America.

49. *SEPTORIA FLAGELLARIS*, Ell. & Evrht. Bull. Torrey Bot. Club X, p. 97; Ellis, N. A. F., No. 1,152.

Spots reddish-brown, subrotund, dry, becoming pallid in the center, 1—2 millim. in diam., border elevated; perithecia brown, sublenticular, innate, slightly prominent, epiphyllous, 80—120 μ in diam., 1—3 in a spot; sporules hyaline, linear, attenuated towards one end, nucleolate or 4—8-septate, 35—120 x 1½—2 μ . On leaves of *Calystigia sepium*. New Jersey. Differs from *S. convolvuli*, Desm., and *S. sepium*, Desm., in the size of the spores and color of the spots.

NOTE.—Among all the specimens of so-called “*Septoria Fraxini*,” received from various parts of this country and as well as those distributed in various Exsiccati, we have never been able to find any with the characteristic sporules of *Septoria*. They are all about the same as those distributed in N. A. F., 743, as *Piggotia Fraxini*, B. & C., granular matter or small, imperfectly-developed sporules or spermatia and resembling very much the perithecia of a young or sterile *Sphaerella*, perhaps the early stage of growth of *Sphaerella convexula*, Schw.—EDS.

50. *SEPTORIA FRAXINI*, Desm. Sylloge III, p. 495; Rav. F. A., No. 24.

“Hypophyllous; perithecia minute, black, semi-innate, scattered in irregular spots; sporules cylindrical, ends truncate, nucleolate.” On leaves of *Fraxinus*. Florida. My specimens in F. A. are sterile and of no value for description.

51. *SEPTORIA FRUCTIGENA*, B. & C. Grev. III, p. 10; Sylloge III, p. 558.

“Perithecia scattered, minute; sporules filiform, curved above, 35 μ long.” On bleached fruit of *Passiflora*. South Carolina.

52. *SEPTORIA GALIORUM*, Ellis. Bull. Torrey Bot. Club IX, p. 74; Sylloge III, p. 543; S. Galli, N. A. F., 745.

Perithecia black, punctiform, minute, scattered, shining; sporules hyaline, filiform, slightly curved, faintly septate, 18—25 x 1½ μ . On dead stems of *Galium*.

53. SEPTORIA GAURINA, E. & Kellerman. Am. Nat. XVII, p. 1,165; Ellis, N. A. F., No. 1,133.

Spots light, dusky brown, rather irregular, border definite, slightly raised; perithecia numerous, brown, immersed, 100—140 μ in diam., visible on both surfaces of the leaves, but expelling the sporulæ in white threads upon the upper; sporules linear, curved, yellowish, granular, continuous or 1—3-septate, 50—75 x 2½—3 μ . On leaves of *Gaura pariflora*. Kansas.

54. SEPTORIA MACULOSA, Ger. Bull. Torr. Bot. Club IV, p. 64.

Spots grey or tawny, subcircular or elongated, three millim. broad; perithecia black, subglobose, innate, prominent, densely clustered in the center of the spot, epiphyllous, 84 μ in diam.; sporules hyaline, filiform, slightly curved, 25—40 x 1½ μ . On leaves of *Cupbua viscosissima*. New York and Pennsylvania. This species appears to differ in the arrangement of the perithecia and in the size and appearance of the sporules from *S. maculosa*, Lev.; Sylloge III, p. 513.

(To be continued.)

NOTES ON THE BOLETI OF THE UNITED STATES.

BY CHAS. H. PECK.

Fries, in *Hymenomycetes Europæi*, gives descriptions of ninety species of *Boleti* and adds, in an appendix, the diagnoses of ten more whose affinities are doubtful. Almost as many species have been recorded for this country, and probably when they shall have been as thoroughly collected and studied here as they have been in Europe the number of United States species will exceed the number of the European.

Fries makes the remark, "Nullum genus quam Boletorum magis me molestavit:" "No genus has troubled me more than that of the *Boleti*;" and he indicates in the context that one cause of the trouble was the imperfect manner in which many species had been described. In my efforts to write a monograph of the American species, I have encountered the same difficulty and, unless more information can be obtained concerning some species than is afforded by the descriptions of them, it will be necessary to follow the example of Fries and add an appendix of species of doubtful affinity. Among these may be mentioned *B. betula*, Schw., *B. Murrai*, B. & C., and *B. alboater*, Schw. Fries refers the first one to *B. parasiticus*, Bull., but the viscose pileus, the stem with a reticulated bark, separating like the bark of birches, and the habitat on lignose earth, cast a doubt on the accuracy of this reference. *B. Murrai* is said to have spores pale yellow, as in *P. castaneus*. This would indicate an affinity with the *Cariosi*, but the internal character of the stem is not indicated. If it shall prove to be stuffed or excavated, all doubt concerning its relationship will be removed.

To the description of *B. decipiens*, B. & C., is added the remark that its affinities are clearly with *B. flavidus* and its allies; but its dry pileus would exclude it from the *Viscipelles*, to which *B. flavidus* belongs. If there is no mistake in the description, the remark is misleading. I suspect it belongs to a very different group from *B. flavidus*. It is also said to be so much like *Paxillus porosus*, Berk., when dry, that it is scarcely distinguishable without examination of the spores. Now *Paxillus porosus* has the stem eccentric or lateral in its attachment to the pileus, and I have been kindly informed by Mr. Ravenel, who has collected *B. decipiens*, that it also sometimes has the stem eccentric or even lateral. The forms with central stem appear to be a good *Boletus*, but what shall we say of the other forms? They certainly are full of significance. They make the connection between *Boletus* and *Paxillus* (if *P. porosus* is a good *Paxillus*) too intimate to be comfortable. The assertion of Fries that *Boletus* is a sharply defined genus loses much of its force. We can no longer depend upon the spores of *P. porosus* to separate it from the *Boleti*, for *B. sphærocephalus*, Barla., has ovoid spores and *B. sphærosporus*, Pk., has subglobose spores. Nor can we rely on its eccentric or lateral stem, for *B. decipiens* obliterates this character. I see but two ways out of the dilemma, either of which will necessitate the removal of *P. porosus* from among the *Paxilli*. One is to refer both *P. porosus* and *B. decipiens* to a distinct genus; the other is to extend the characters of *Boletus* by inserting after the word "central" the words "or rarely eccentric or lateral." It is barely possible that Kalchbrenner's genus *Boletinus* may help us out of the difficulty, but the character on which it is founded is abstruse and needs confirmation. It should be sought in the two species under consideration, also in *B. pictus*, Pk., *B. paluster*, Pk., and in *B. ampliporus*, Pk., which last species is very closely allied to if not identical with *B. cavipes*, the type species of *Boletinus*. The trama which characterizes *Boletinus* is not satisfactorily shown in the dried specimens which I have examined. The character of the hymenium is very similar in all the species indicated above. *B. Russellii*, Frost, and *B. Morgani*, Pk., constitute a distinct group, *Laceripedes*, not recognized by Fries and thus far peculiar to this country. *B. alveolatus*, B. & C., as described by Frost in Bull. Buf. Soc. Nat. Sci., June, 1874, p. 102, appears to connect this group with the *Luridi*, to which it evidently belongs, as shown by the maroon-colored mouths of the tubes, although in Grev., Vol. I, p. 36, *B. alveolatus*, B. & C., is affirmed to be either *B. edulis* or very nearly allied to it.

B. Spraguei, Frost, is not sufficiently distinct from *B. vermiculosus*, Pk. The name of *B. robustus*, Frost, must be changed, inasmuch as it clashes with *B. robustus*, Fr. The Frostian plant is well marked, constant in its characters and very easily recognized. It merits the name—

BOLETUS EXIMIUS.—Pileus at first very compact, subglobose or hemispherical, subpruinose, purplish-brown or chocolate color, some-

times with a faint tinge of lilac, then convex, soft, paler, becoming smoky-red or pale chestnut color, flesh reddish-white or grayish; tubes at first concave or nearly plane, stuffed, colored nearly like the pileus, at length paler, depressed around the stem, minute, round; stem stout, generally short, equal or slightly tapering upward, abruptly narrowed at the base, minutely furfuraceous, colored like or a little paler than the pileus, purplish-gray within; spores subferruginous, .00045 to .0006 in. long, .0002 to .00025 in. broad; pileus 3—10 in. broad, stem 2—4 in. long, 6—12 lines thick. Woods and their borders, July to September. It belongs to the section *Edules*.

NEW SPECIES OF USTILAGINEÆ AND UREDINEÆ.

BY J. B. ELLIS AND B. M. EVERHART.

We have received from Prof. F. L. Scribner, of the Department of Agriculture, Washington, D. C., samples of several grasses, from the Rocky mountain region, infested with forms of *Ustilagineæ*, which we have not been able to refer satisfactorily to any published species and which we describe provisionally as new. Two *Puccinias* sent from Washington Territory by Mr. Suksdorf and an *Ustilago* sent from Missouri by B. T. Galloway are also included.

TILLETIA FUSCA, E. & E. (N. A. F., 1,895).—In ovaries of *Festuca microstachys*. Spores mostly globose, 19—22 μ or occasionally subovate, subelongated or otherwise irregular in shape, the surface covered with subhexagonal reticulations bounded by rather thick walls, about 1½ μ high, overspread and partially hidden by a dirty, subhyaline (gelatinous?) layer, which envelops the dark brown body of the spores, through which the projecting walls of the reticulations are scarcely prominent. *T. sphærococca*, Fisch., and *T. Rauwenhoffii*, Fisch., have rather paler, larger spores, with larger and more prominent reticulations.

TILLETIA MONTANA, E. & E.—In ovaries of *Sporobolus gracillimus*. Spores globose, 19—22 μ , or suboval, subelongated, 18—25 μ ; epispore, consisting of two layers, the outer one hyaline, about 2½ μ thick, entirely covering the reticulations, which have thinner walls and are rather more irregular in shape than in the preceding species; the body of the spore is also lighter colored.

TILLETIA ASPERIFOLIA, E. & E.—In ovaries of *Sporobolus asperifolius*, has spores globose or subglobose, 17—20 μ , pale brown; hyaline envelope about two μ thick; reticulations subhexagonal or of irregular shape, with rather thick walls which rise through but hardly project above the surface of the enveloping, hyaline coat. Differs from both the preceding in its smaller spores and from the last also in the thicker walls of its reticulations, but is closely allied to the first-described species (*T. fusca*) which, however, has darker-colored spores.

TILLETIA CEREBRINA, E. & E.—In ovaries of *Deschampsia cæspitosa* has globose, dark brown spores, 22–28 μ in diam., outer hyaline coat about $2\frac{1}{2}$ μ thick, barely covering the projecting edges of the thick-walled, irregular, subcerebriform reticulations. Differs from all the three preceding species in its larger spores.

USTILAGO MEXICANA, E. & E.—In the ovaries of some undetermined species of *Muhlenbergia*. Collected on the mountains near Batopilas, Mexico (alt., 8,850 ft.), by Dr. E. Palmer. Spores black or violet-black, smooth, globose, 5–6 μ or subelongated, 6–8 x 5 μ . Nearly every ovary on the affected plants is filled with the dusty mass of spores.

USTILAGO UNIOLE, E. & E.—In ovaries of *Uniola gracilis*, from Texas. Spores subglobose, echinulate-tuberculose, 7–10 μ , of a dull black color seen in mass. The affected ovaries are considerably swollen.

USTILAGO VIRIDIS, E. & E.—On *Setaria*, Louisiana. Rev. A. B. Langlois, No. 56. Forming a yellow-green coating on the outside of the seeds, which are swollen and become white and soft within; spores globose or nearly so, 4–5 μ , rough warted.

SOROSPORIUM CONSANGUINEUM, E. & E.—In ovaries of *Aristida Rusbyi*, Scribner. Collected in Northern Arizona by Mr. Rusby. Spore masses globose or subelongated, 50–70 μ in diam., composed of small (6–8 μ), polygonal spores with the epispore smooth or nearly so. Differs from *S. Ellisii*, Winter, in its smaller, smooth spores.

UROMYCES ARISTIDÆ, E. & E.—On leaves of *Aristida*, New Mexico. III. Sori linear, 1–2 millim. long, naked (when mature), dark ferruginous-brown; spores loosely compacted in the sori, elliptical or obovate, 25–35 x 18–22 μ , smooth, yellowish-brown, on long (80–100 μ), stout but deciduous pedicels, epispore not distinctly thickened above. Differs from *U. Poæ*, Rabh., and from *U. Dactylidis*, Otth., in its elongated sori and larger spores.

PUCCINIA SUBCIRCINATA, E. & E. (N. A. F., 1,840.)—On living leaves of *Senecio triangularis*, Mt. Paddo, Wash. Terr., August, 1885. W. N. Suksdorf, No. 197, I and III.

I. *Aecidia* gregarious, mostly surrounded by the sori of the teleutospores, mostly hypophyllous, shallow, about one half millim. in diam., with a spreading, toothed margin; spores globose, 12–15 μ or subelliptical, 20 x 12–15 μ , or subangular or otherwise irregular.

III. Mostly hypophyllous and arranged in a ring around the clusters of *aecidia*, but also more or less scattered and forming groups unaccompanied by *aecidia* or extending down on the petiole of the leaf; sori subhemispherical, lead-color, about one half millim. in diam., opening above in a circumscissile manner, with a distinct round opening, as if the top had been cut away, and discharging through this opening the abundant

reddish-brown spores after the manner of a *Melanconium*; spores elliptical, scarcely constricted, minutely granular-roughened, mostly rounded at both ends, scarcely thickened at the apex, $22-30 \times 16-20 \mu$. On very short pedicels.

PUCCINIA NUDA, E. & E.—On leaves of *Arnica foliosa*, Falcon Valley, Wash. Terr., July, 1885. W. N. Suksdorf, No. 200.

III. Sori amphigenous, scattered or gregarious, round, black, about one millim. in diam., color of the leaf around the sori pale yellowish; spores oblong-elliptical or oblong-clavate, slightly constricted at the septum, strongly thickened at the apex, with a distinct, subhyaline, mostly oblique papilla, smooth, $35-45 \times 19-22 \mu$, pale at first but finally becoming quite dark, especially above, and then the upper cell becomes broader and the apex more obtuse; pedicels $90-115 \mu$ long; a few spores without septa $25 \times 22 \mu$, obovate, on long pedicels, were seen mingled with the others; also a few uredo spores globose, $25-30 \mu$ in diam., smooth or nearly so and without pedicels were seen in the same sori with the teleutospores. We have not seen *Puccinia arnicalis*, Pk., which was on *Arnica cordifolia*, from Colorado, and is said to have the "sori clustered, crowded or confluent, reddish-brown" and the teleutospores "scarcely constricted, minutely roughened" and the pedicel very short—characters which would seem to separate it from the Washington Territory specimens; nor does it seem properly referable to *P. Tanacetii*, to which it bears a general resemblance.

A NEW VOLUTELLA.

BY A. B. LANGLOIS.

VOLUTELLA ELLISII, Langlois.—Sporodochia sessile, hemispheric, of delicate rose color, $\frac{1}{4}-\frac{1}{2}$ millim. in diam.; hairs $80-100 \times 3-4 \mu$, hyaline, continuous, arising from the margin and from the whole surface of the membranaceous receptacle; conidia oblong, $6-10 \times 2\frac{1}{2}-3 \mu$, curvulate, obscurely guttulate; sporophores bacilliform, $18-20 \times 3 \mu$.

(Sporodochiis sessilibus, hemisphericis, læte roseis, $\frac{1}{4}-\frac{1}{2}$ millim. latis; setulis $80-100 \times 3-4 \mu$, erectis, hyalinis, continuis ex margine vel toto membranaceo receptaculo assurgentibus; conidiis oblongis, $6-10 \times 2\frac{1}{2}-3 \mu$, curvulis, obscure guttulatis; sporophoris bacillaribus, $18-20 \times 3 \mu$, in culmis, vaginis foliis mortui graminum ex genere panicum principaliter, ad loca humida et umbrosa.)

A very attractive little fungus, on dead pieces of grass, particularly of the genus *Panicum*, lying on damp ground, partially in shade. Pointe à la Hache, La. (No. 1000.) The long, white bristles seem to be very fragile and to fall away easily. This volutella seems to be intermediate between *V. Arundinis*, Desm., and *V. Cerryana*, Sacc., differing from both in its hemispheric sporodochia and in its conidia of intermediate size.

NOTES ON FLORIDA FUNGI.--No. 13.

BY W. W. CALKINS, CHICAGO, ILLINOIS.

217. *OPHIOBOLUS VERSISPORUS*, E. & M.—On petioles of *Sabal Palmetto*; abundant.
218. *STEREUM SUBPILEATUM*, B. & C.—Abundant on old logs and the host of several parasitic species.
219. *CYPHELLA CANDIDA*, Fr.—Rare, on old cedar log.
220. *PILACRE PETERSII*, B. & Br.—In decayed places on living oaks.
221. *CERCOSPORA LIQUIDAMBARIS*, E. & E.—On leaves.
222. *CERCOSPORA MAGNOLIÆ*, E. & H.—On leaves; abundant.
223. *TRAMETES RIGIDA*, B. & Mont.—On old logs and limbs, but not very common.
224. *TRAMETES VERSATILIS*, B. & C.—On pine logs; rare.
225. *ZYGODESMUS GRANULOSUS*, Pk.—Common on old bark.
226. *ZYGODESMUS PANNOSUS*, B. & C.—Abundant.
227. *HYPHELIA TERRESTRIS*, Fr.—On the ground; white.
228. *VALSA SABALINA*, Cooke.—Abundant on petioles of *Sabal*.
229. *FAVOLUS* (*Polyporus*) *FLACCIDUS*, Fr.—Only one specimen found clinging to a dead *Myrica*; a fine thing.
230. *AGARICUS CERVINUS*, Schæff.—Common on old logs.
231. *AGARICUS APPLICATUS*, Batsch.—Rare, on a log.
232. *AGARICUS ULMARIUS*, Bull.—On logs; very large and fine.
233. *AGARICUS LACCATUS*, Scop.—The ground in pine woods sometimes carpeted with this species and its varieties.
234. *AGARICUS MUSCARIUS*, Fr.—Abundant and poisonous, but very attractive in appearance.
235. *AGARICUS GALERICULATUS*, Scop.—Very common.
236. *AGARICUS CORTICOLA*, Schum.—On limbs of living *Melia Azedarach* in Jacksonville.
237. *AGARICUS ABORTIVUS*, B. & C.—Common on old logs in wet places. As Mr. Ellis suggests, this may be deformed *A. prunulus*.
238. *AGARICUS OSTREATUS*, Jacq.—A foot wide and as long; pure white.
239. *AGARICUS CARBONARIUS*, A. & S.—On logs; not common.
240. *SPHÆRIA LEUCOBASIS*, E. & M.—Abundant on petioles of *Sabal*.
241. *SPHÆRIA NIGROANNULATA*, B. & C.—Common on leaves of *Yucca aloifolia*.
242. *SPHÆRIA SABALENSIS*, Cooke.—On petioles of *Sabal*.
243. *SPHÆRIA SABALICOLA*, E. & M.—On *Sabal Palmetto* stems.
244. *SPHÆRELLA SERRULATA*, E. & E., n. sp.—On stems of *Sabal*.
- JOURN. MYCOL., Vol. III, No. 4.
245. *SPHÆRELLA GLAUCA*, Cke.—On leaves of *Magnolia glauca*.

246. SPHÆRELLA GORDONIÆ, Cke.—Abundant on leaves of “Bull Bay.”

247. HYPOCREA CITRINA, Fr.—Rare, on rotten wood.

248. CORDYCEPS CAPITATA, Holmsk.—Found in sandy plantation field. Heads black, in this differing from the description; a fine species.

249. ARCYRIA PUNICEA, Pers.—On rotten logs in marshes; not common.

250. CONIOPHORA ELLISII, B. & C.—Formerly *Hymenochaete*, Grev. 4,162; rare on cedar logs.

NEW LITERATURE.

BY W. A. KELLERMAN.

“REVISIO MONOGRAPHICA GENERIS GEASTERIS MICH. E TRIBU GASTEROMYCETUM.” Auctore Doct. G. B. De Toni. *Revue Mycologique*, 1er April, 1887.

“FUNGI SELECTI EXSICCATI PRÆCIPUE GALLIÆ ET ALGERIÆ.” C. Roumeguere. l. c.

“FUNGI IN INSULA S. THOME LECTI A CL A. MOLLER.” Auctore Dr. G. Winter. *Lipsiense*. Ext. do Bol. da Soc. Brot. IV, 1886.

One hundred species are enumerated, many of them new to science, and, in that case, fully described. Two lithographic plates contain figures of ten new species of *Meliola* and one photographic plate shows mycelium and perithecium of two *Meliolæ* and one *Asterina*.

“REPORT FOR 1886 ON THE FUNGI OF THE EAST OF SCOTLAND.” By James W. H. Trail. *The Scottish Naturalist*, January, 1887.

“ON THE INFLUENCE OF CRYPTOGRAMS ON MANKIND.” By James W. H. Trail. *The Scottish Naturalist*, April, 1887.

“REVISION OF THE SCOTCH PERONOSPOREÆ.” By James W. H. Trail. l. c.

“NEW SCOTCH MICROFUNGI.” By J. W. H. Trail. l. c.

“THE MYCOLOGIC FLORA OF THE MIAMA VALLEY, OHIO.” By A. P. Morgan. *The Journal of the Cincinnati Society of Natural History*. April, 1887. Continued from Vol. IX, p. 8.

“ORCHARD RUSTS.” By A. B. Seymour, Cambridge, Mass. From Vol. IV, *American Horticultural Report*.

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MANHATTAN, KANSAS, JUNE, 1887.

No. 6.

ENUMERATION AND DESCRIPTION OF THE SEPTORIAS OF NORTH AMERICA.

BY GEORGE MARTIN, M. D.

(Continued from page 53.)

55. SEPTORIA GOSSYPINA, Cke. Grev. XII, p. 25; Sylloge III, p. 516; Rav. F. A., No. 509.

Epiphyllous; spots white, irregular, border purple; perithecia punctiform, central, black, semi-innate, 130—150 μ in diam.; sporules hyaline, linear, "50 x 1 μ ." On leaves of *Gossypium*. South Carolina.

56. SEPTORIA GRAMINUM, Desm. Grev. III, p. 10; Sylloge III, p. 565; Ellis, N. A. F., No. 750.

Spots pallid, narrow, elongated, limited by the nerves, often with a narrow brown margin; perithecia brown, curved, obscure at first, then rupturing and leaving a concave disk, scattered, 150 μ in diam.; sporules hyaline, linear, flexuous, entire, minutely nucleolate, 55—75 x 1—1.3 μ . On *Panicum sanguinale*. New Jersey.

57. SEPTORIA GRATIOLÆ, E. & M. Journ. Mycol. I, p. 107.

Perithecia punctiform, minute, emergent, scattered over the faded leaves, but not in definite spots; sporules filiform, nucleate, straight or somewhat curved, continuous, 30—40 x $\frac{1}{2}$ —1 μ . On fading leaves of *Gratiola quadridentata*. Florida.

58. SEPTORIA HELIANTHI, E. & K. Am. Nat. XVII, p. 1165; Ellis, N. A. F., No. 1134.

Spots brown, 2—8 millim. broad, border yellowish; perithecia brown, immersed, collapsing, epiphyllous, 150 μ in diam.; sporules hyaline, linear, generally attenuated towards the ends, nucleolate, becoming 3—5-septate, 30—70 x 2—3 μ . On *Helianthus doronicoides*. Kansas.

59. SEPTORIA HOSACKIÆ, Hark. Bull. Cal. Acad., February, 1884, p. 31; Sylloge III, 508.

"Spots irregular, brownish yellow; perithecia minute, amphigenous; sporules hyaline, filiform, flexuous, 3—7-septate, 64 x 4 μ ." On living leaves of *Hosackia strigosa*. California.

60. *SEPTORIA HYDROCOTYLES*, Desm. Sylloge III, p. 531; Ellis, N. A. F., No. 1131.

Spots brownish, then pallid, subregular, one millim. in diam., border red-brown, narrow; perithecia black, flattened, innate, epiphyllous, 60—70 μ in diam.; sporules hyaline, linear, curved, 8—10-guttulate ("16—25 x 1—2 μ ," Sacc.), 30—40 x 1—2 μ . On *Hydrocotyle repanda*. Florida.

61. *SEPTORIA ILICIFOLIA*, Oke. & Ellis; Grev. VI, p. 85; Sylloge III, p. 483.

"Spots pallid, with a brown border; perithecia punctiform, black, semi-immersed; sporules minute, hyaline." On leaves of *Ilex*. New Jersey.

62. *SEPTORIA INCONSPICUA*, B. & C. Grev. III, p. 9; Sylloge III, p. 554; Ellis, N. A. F., No. 1145.

Spots white or light gray, 1—3 millim. broad, border narrow, light brown; perithecia brown-black, lenticular, amphigenous, scattered, 70—80 μ ; sporules hyaline, linear, straight, 20—28 x 1—1½ μ , continuous. On leaves of *Plantago lanceolata*. N. Jersey.

63. *SEPTORIA INCRESCENS*, Pk. 33d Rep. N. Y. S. Mus., p. 25; Sylloge III, p. 533.

"Spots minute at first, then large, brown, dry in the center; perithecia minute, black; sporules filiform, curved or flexuous, 30—40 μ long." On leaves of *Trientalis Americana*. New York.

64. *SEPTORIA INFUSCATA*, Winter. Journ. Mycol. I, p. 122.

"Spots large, somewhat round or irregular, dull grey, often variegated and subzoned, border brown, indeterminate, generally 20 millim. long, six millim. broad; perithecia loosely clustered, prominent, globose, black, membranaceous, thin, 87—105 μ in diam.; sporules filiform, ends rounded, a little enlarged upwards, multiseptate, hyaline, 50—70 x 1½—2 μ ." On living leaves of *Lepachys pinnata*. Missoûri.

65. *SEPTORIA IRREGULARIS*, Pk. Bot. Gaz. V, p. 34; Sylloge III, p. 484; N. A. F., No. 1127.

Spots small, angular, often confluent, at first yellowish above, then reddish-brown, with a narrow, darker border, brown or grayish-brown beneath; perithecia hypophyllous, sometimes amphigenous, irregular, black; sporules numerous, filiform, hyaline, 30—45 μ long. On living leaves of *Rhus Toxicodendron*. Illinois and New Jersey. Specimen 1127, N. A. F., has sporules 50—60 x 3—4 μ , 3—5-septate.

66. *SEPTORIA KALMIÆCOLA* (Schw.), B. & Curt. Grev. III, p. 9; Sylloge III, p. 499; N. A. F., No. 344.

Spots white, orbicular, margin tumid, with a blackened ring around; perithecia lenticular, black, clustered, innate, hypophyllous; sporules hyaline, cylindrical, 21 x 1½ μ , "septorioidies." On leaves of *Kalmia latifolia*. South Carolina and Pennsylvania.

67. *SEPTORIA KELLERMANIANA*, Thum. Kansas Academy of Science, Nov. 25, 1884, p. 81; Journ. Mycol. I, p. 71.

"Sporules bacilliform, straight, slender, simple or faintly septate, $60-80 \times 1\frac{1}{2} \mu$." On leaves of *Vitis riparia*. Kansas.

68. *SEPTORIA LACTUCÆ*, Pass. Sylloge III, p. 551; Bot. Gazette III and IV, p. 170; Ellis, N. A. F., No. 345.

Spots pallid or ferruginous, irregular, indefinite; perithecia dark brown, amphigenous, scattered, $80-90 \mu$ in diam.; sporules hyaline, filiform, straight or curved, entire, $25-35 \times 1\frac{1}{2}-2 \mu$. On leaves of *Lactuca sativa*. Illinois and New Jersey.

69. *SEPTORIA LACTUCICOLA*, E. & M. Am. Nat. XVI, p. 1002; Sylloge III, p. 552; Ellis, N. A. F., No. 1613.

Spots large, red brown, 12-30 millim. broad; perithecia brown, innate, amphigenous, scattered, $80-85 \mu$ in diam.; sporules hyaline, filiform, often curved, $25-40 \times 1\frac{1}{2} \mu$. On living leaves of *Lactuca Canadensis*. New York.

70. *SEPTORIA LAMII*, Passer. Sylloge III, p. 538; Ellis, N. A. F., No. 1149.

Spots gray or pallid, limited by the veins, irregular; perithecia black, epiphyllous, scattered, $60-70 \mu$ in diam.; sporules filiform, hyaline, flexuous ("continuis?"), $30-40 \times 1\frac{1}{2} \mu$. On leaves of *Leonurus Marurbias-trum*. Pennsylvania.

71. *SEPTORIA LEPIDIICOLA*, E. & M. Am. Nat. XVI, p. 1002; Sylloge III, p. 519; Ellis, N. A. F., No. 1147.

Spots pallid, subregular, three fourths millim. in diam.; perithecia chestnut brown, aggregated, 74μ in diam.; sporules hyaline, cylindrical, slightly curved, ends obtuse, guttulate or septate, $24-30 \times 2\frac{1}{2}-3 \mu$. On leaves of *Lepidium Virginicum*. Pennsylvania.

72. *SEPTORIA LEPTOSTACHYA*, E. & K. Bull. Torr. Bot. Club II, p. 115.

Spots pale brown, subrotund, scattered or confluent, dry, mostly limited by the veinlets, 2-4 millim. in diam.; perithecia brown-black, very delicate, slightly prominent, amphigenous, scattered, $65-80 \mu$; sporules hyaline, filiform, slightly undulate-curved, entire, $20-22 \times 1 \mu$. On *Phryma Leptostachya*. Ohio.

73. *SEPTORIA LIQUIDAMBARIS*, C. & E. Grev. VIII, p. 11; Sylloge III, p. 501; Ellis, N. A. F., No. 530.

Spots brown, suborbicular, 1-2 millim. in diam.; perithecia brown-black, subglobose, stomatous, prominent, clustered, hypophyllous, 80μ in diam.; sporules hyaline, linear, curved, ends slightly attenuated and rounded, 3-5-septate, $50-60 \times 3 \mu$. On leaves of *Liquidambar styraciflua*. New Jersey.

74. SEPTORIA LOBELIÆ, Pk. 26th Rep. N. Y. S. Mus., p. 87; Sylloge III, p. 532.

Spots pallid or nearly white, subcircular, often confluent, dry, 4—5 millim. in diam.; border brown, purple or black; perithecia black, flattened, innate, prominent, epiphyllous ("amphigenous"), clustered, numerous, 100—130 μ in diam.; sporules hyaline, filiform, nearly straight, 26—40 x 1—1½ μ ("17—25 μ long"). On leaves of *Lobelia spicata* and *L. syphilitica*. New York to Iowa.

75. SEPTORIA LOPHANTHI, Winter. Hedwigia, 1883, p. 71; Sylloge III, p. 538.

Spots brown-black, angular, 1—3 millim. broad, often confluent; perithecia black, subglobose, immersed, gregarious, amphigenous, 150—200 μ in diam.; sporules hyaline, filiform, flexuous or curved, ends subacute or one end rounded, entire or sparingly septate, 35—55 x 2—2½ μ , exuding in white threads, often covering the perithecia with a crust. On living leaves of *Lophanthus nepetoides*. Illinois.

76. SEPTORIA LUDWIGIÆ, Cke. Grev. VII, p. 33; Sylloge III, p. 512; Rav. F. A., No. 263.

Spots pallid, subrotund, dry, 1—2 millim. in diam., border dusky red; perithecia dark brown, innate, slightly prominent, mostly epiphyllous, 5—8 in a spot, 70—90 μ in diam.; sporules hyaline, filiform, flexuous, ends obtuse, multinucleate, (?) 40—42 x ½ μ . On leaves of *Ludwigia palustris*. South Carolina and Pennsylvania.

77. SEPTORIA LUPINI, Harkn. F. California, p. 11; Sylloge III, p. 508.

"Epiphyllous; spots indeterminate, yellowish, frequently occupying the whole leaf; perithecia minute, papillate; sporules linear, ends acute, obscurely septate, 40—60 x 4—5 μ ." On living leaves of *Lupinus densiflorus*. California.

78. SEPTORIA CONSPICUA, E. & M. N. A. F., p. 1736.

Spots amphigenous, rusty brown, with a narrow, slightly raised border, suborbicular, 2—5 millim. or, by confluence, one cm. in diam., thickly scattered over the leaf; perithecia amphigenous, black, convex, numerous, 100—130 μ in diam.; sporules filiform, 40—55 x 1—1¼ μ , nucleate, subhyaline. Many of the perithecia contain, also, globose, hyaline bodies, 6—8 μ in diam., similar to those found in the perithecia of *Asterina orbicularis*, B. & C. This is quite distinct from *S. Lysimachice*, West., which is reported by Prof. Peck in N. Y. State, 38th Rep., p. 97. On leaves of *Steironema ciliatum*. Delaware. A. Commons.

79. SEPTORIA LYTHRINA, Pk. 3rd Rep. N. Y. S. Mus., p. 25; Sylloge III, p. 512.

Spots gray or gray-brown, suborbicular or irregular, 3—5 millim. broad, often with a black ring; perithecia black, subglobose, slightly prominent, clustered, mostly epiphyllous, 75—112 μ in diam.; sporules hyaline, filiform, flexuous or curved, 3-septate, 20—40 x 1 μ . On leaves of *Lythrum salicaria* and *L. alatum*. New York and Kansas.

80. *SEPTORIA MAGNOLIÆ*, Cke. Sylloge III, p. 475; Rav. F. A., No. 153 and 261.

Spots brown, irregular, thickened; perithecia black, subimmersed, epiphyllous; sporules linear, nucleolate, $25-30 \times 1\frac{1}{2} \mu$. On leaves of *Magnolia grandiflora*. Texas and South Carolina.

81. *SEPTORIA MALVICOLA*, E. & M. n. s.

Spots gray, partially limited by the veinlets, 2—3 millim. broad, clustered and coalescing, bordered by a yellow discoloration; perithecia black, subglobose at first, afterwards depressed, thinly membranaceous, clustered, numerous, mostly epiphyllous, $90-100 \mu$; sporules hyaline, linear, ends obtuse, a little curved, faintly 3—4-septate, $30-37 \times 1 \mu$. On leaves of *Malva rotundifolia*. New York.

82. *SEPTORIA MELANOPHTHALMI*, B. & C. Grev. III, p. 12; Sylloge III, p. 509.

"Spots pallid, surrounded by a broad, dark-red margin; sporules sausage-shaped or waved, short, 2—3-nucleolate." On leaves of *Dolichos melanophthalmus*. North Carolina.

83. *SEPTORIA MENTZELIÆ*, E. & K. Journ. Mycol. II, p. 4.

Spots pallid, subregular, 5—8 millim. in diam.; perithecia black, innate, prominent on the upper surface of the leaves, visible on the under, 100μ in diam.; sporules hyaline, linear, subundulate, nucleolate, $40-60 \times 1\frac{1}{2}-2 \mu$. On leaves of *Mentzelia nuda*. Kansas.

84. *SEPTORIA MICROSPERMA*, Pk. 34th Rep. N. Y. S. Mus., p. 44; Sylloge III, p. 506.

"Spots brown, indefinite, often confluent; perithecia hypophyllous, numerous, minute, brown, dry, rugose, irregularly fissured; sporules hyaline, sausage-shaped, $9-14 \mu$ long." On leaves of *Betula lenta*. New York.

85. *SEPTORIA MIMULI*, E. & K. Am. Nat. XVII, p. 1165; Journ. Mycol. I, p. 122.

"Spots gray or white, 1—2 millim. in diam., border dark; perithecia black, 4—10 in a spot, innate, equally conspicuous on both surfaces of the leaves, $80-100 \mu$ in diam.; sporules hyaline, linear, often attenuated towards one end, yellowish, nucleolate or remotely septate, curved, $30-45 \times 1\frac{1}{2}-2\frac{1}{2} \mu$." On leaves of *Mimulus ringens*. Kansas and Missouri.

86. *SEPTORIA MIRABILIS*, Pk. 25th Rep. N. Y. S. M., p. 87; Sylloge III, p. 576; Ellis, N. A. F., No. 532.

Spots pallid or light yellow, angular, limited by the veinlets; perithecia yellow, hypophyllous, minute; sporules hyaline, oblong-obovate, entire, nucleate, one end mostly acute, $30-50 \times 12 \mu$. On fronds of *Onoclea sensibilis*. New York and Pennsylvania.

NOTE.—This is *Gloeosporium Phegopteridis*, Pass. Sacc. Syll. III, p. 721. It is evidently not a good *Septoria* and should be referred either to *Gloeosporium* or to *Phleospora*.—EDS.

87. SEPTORIA NABALI, B. & C. Grev. III, p. 9; Sylloge III, p. 547.

Spots light to red-brown, border flat, broad, brown; perithecia brown, slightly prominent, epiphyllous, $50\ \mu$ in diam.; sporules hyaline, filiform, flexuous, occasionally 1—3-septate, $30\text{--}45 \times 1\frac{1}{2}\ \mu$. On leaves of *Nabalus alba*. New Hampshire to Pennsylvania.

88. SEPTORIA NARVISIANA, Sacc. Sylloge III, p. 568. (*S. Holoschaeni*, Sacc., Mich. I, p. 196.)

Spots obsolete; perithecia dark brown, globose, innate, erumpent, subgregarious, very delicate, $100\text{--}114\ \mu$ in diam.; sporules pale olive, cylindrico-fusoid, 5—7-septate, not constricted, slightly curved, $35\text{--}50 \times 3\frac{1}{2}\text{--}4\ \mu$. On *Scirpus maritima*. Shores of Chesapeake Bay.

89. SEPTORIA NIPHOSTOMA, B. & C. Grev. III, p. 12; Sylloge III, p. 475; Rav. F. A., No. 28; Ellis, N. A. F., p. 744.

Perithecia black, shining, epiphyllous, thickly scattered, $130\text{--}160\ \mu$; sporules hyaline, linear, straight, ends obtuse, 3-septate, $20\text{--}25 \times 2\ \mu$; spots obsolete, leaf faded and tawny. On leaves of *Magnolia grandiflora*. Carolina and Florida.

90. SEPTORIA NOCTIFLORÆ, E. & K.

Spots pallid, round or oval, 2—3 millim. broad, border narrow, light brown; perithecia light brown, subglobose, very delicate, innate, slightly prominent, epiphyllous, $85\text{--}95\ \mu$ in diam.; sporules hyaline, subfusiform, 1-septate, $30\text{--}36 \times 2\text{--}2\frac{1}{2}\ \mu$. On *Silene noctiflora*. Kansas.

91. SEPTORIA NOLI-TANGERIS, Gerard. Bull. Torrey Bot. Club, 1873-4, p. 64; Ellis, N. A. F., p. 1137.

Spots round or oblong, light brown, 1—3 millim. in diam., with a narrow, brown, raised edge and a purplish border; perithecia brown-black, subglobose, innate, slightly prominent, clustered in the center of the spot, mostly epiphyllous, $70\ \mu$ in diam.; sporules hyaline, filiform, curved, $15\text{--}30 \times 2\ \mu$. On leaves of *Impatiens*. New York and Ohio. *S. Nolitangere*, Thum., Sylloge III, p. 514, appears to be nearly if not quite identical with the above, but as he did not publish until 1880, Gerard has the precedence.

92. SEPTORIA OCHROLEUCA, B. & C. Grev. III, p. 9; Pk., 25th Rep. N. Y. S. Mus., p. 88; Sylloge III, p. 504; Ellis, N. A. F., No. 533.

This has been transferred to *Gloeosporium* by Ellis & Everhart. See Journ. Mycol. I, 116.

93. SEPTORIA OENOTHERÆ, West. Sylloge III, p. 513; Rav. F. A., No. 32; Ellis, N. A. F., No. 38.

Spots epiphyllous, round, minute, at first greenish, then brown, with a wine-red border; perithecia black, punctiform, aggregated in the center of the spots, $120\ \mu$ in diam.; sporules filiform, hyaline, curved, minutely pluriguttulate, $35\text{--}40 \times 1\frac{1}{2}\text{--}2\ \mu$. On leaves of *Oenothera biennis*. Pennsylvania to South Carolina.

94. SEPTORIA OLEANDRINA, Sacc. Sylloge III, p. 497.

Spots gray, suborbicular, 3—10 millim. broad, coalescing and at times covering the entire ends of the leaves; perithecia black, subglobose, epiphyllous, erumpent, cellular, scattered, 150—240 μ in diam.; sporules hyaline, cylindrical or cylindrico-clavate, often curved, occasionally 2-septate, 15—30 x 1½—3 μ . On frosted leaves of *Nerium Oleander*. Florida.

95. SEPTORIA OSTRYÆ, Pk. 33d Rep. N. Y. S. Mus., p. 25; Sylloge III, p. 503.

“Spots minute, subcircular, red-brown; perithecia scattered in the center of the spots, brown-black; sporules linear, greatly curved, indistinctly septate, 40—60 μ long.” On the leaves and cones of *Ostrya Virginica*. New York.

96. SEPTORIA PACHYSPORA, Ell. & Hol. Journ. Mycol. I, p. 6; Ellis, N. A. F., No. 1615.

Spots snow white, round or subangular, very thin, 1—2 millim. in diam., border broad, purplish; perithecia black, lenticular, innate, erumpent, epiphyllous, 100—130 μ in diam.; sporules subhyaline, with a greenish-yellow tinge, arcuate-fusiform, 4—6-septate, 35—60 x 3 μ . On leaves of *Zanthoxylum Americanum*. Iowa.

97. SEPTORIA PASTINACINA, Sacc. Mich. II, p. 102; Pk., 33d Rep. N. Y. S. Mus., p. 24; Sylloge III, p. 528.

“Spots brown, diffused, indefinite; perithecia black, applanate, piercing the epidermis with the ostiola, 120—150 μ in diam.; sporules filiform, curved or flexuous, 20—30 x .7—1 μ .” On stems of *Pastinaca sativa*. New York.

98. SEPTORIA PAUPERA, Ellis. Ellis, N. A. F., No. 748.

Spots brown, angular, darker upon the upper surface, ½—1½ millim. broad; perithecia brown, subglobose, very delicate, innate, slightly prominent, hypophyllous, 125—130 μ in diam.; sporules hyaline, filiform, straight or flexuous, ends obtuse, 3—7-septate, 45—55 x 1—1½ μ . On leaves of *Helianthus divaricatus*.

99. SEPTORIA PECKII, Sacc. Sylloge III, p. 567; *Cryptosporium Scirpi*, Pk., 25th Rep. N. Y. S. Mus., p. 84.

“Spots pallid; perithecia black, subglobose, clustered; sporules hyaline, slightly curved, elongated-fusoid, 15—18 μ long.” On *Scirpus fluviatilis*. New York.

100. SEPTORIA PENTSTEMONIS, Ell. & Evrh. Bull. of Torrey Bot. Club II, p. 73; Sylloge III, p. 534.

Spots white, dry, thin, round, 1—1½ millim. in diam., border dark purple, broad; perithecia black, flattened, innate, slightly prominent, mostly epiphyllous, 60 μ in diam.; sporules hyaline, linear, slightly curved, indistinctly nucleolate, 14—20 x 1 μ . On leaves of *Pentstemon Digitalis*. Illinois.

101. SEPTORIA PHOTINIÆ, B. & C. Sylloge III, p. 489.

“Perithecia covered by the small black spots of epidermis; sporules linear, straight, short.” On leaves of *Photinia*. California.

102. SEPTORIA PILEÆ, Thum. Bull. Torrey Bot. Club VI, p. 351; Sylloge III, p. 557; Peck, 34th Rep. N. Y. S. Mus., p. 45.

Spots light gray, angular or suborbicular, scattered, minute, border broad, brown olive; perithecia few or solitary, epiphyllous, minute, brown or black-brown, globose-depressed, $70\ \mu$ in diam.; sporules hyaline, filiform, lightly curved, continuous, $20-28 \times 1\frac{1}{2}-2\ \mu$. On leaves of *Pilea pumila*. Missouri.

103. SEPTORIA PLATANIFOLIA, Cke. Hedwigia, 1878, p. 38; Sylloge III, p. 500; Rav. F. A., No. 27.

Spots obsolete; perithecia brown-black, innate, slightly prominent, numerous, hypophyllous, $60-65\ \mu$ in diam.; sporules immature. On leaves of *Platanus occidentalis*. South Carolina.

104. SEPTORIA PODOPHYLLINA, Pk. Bot. Gazette IV, p. 170; Sylloge III, p. 526; Ellis, N. A. F., No. 1138.

Spots large, indefinite, reddish-brown; perithecia light brown, innate, slightly prominent, few, clustered on or near the center, collapsing when dry, epiphyllous, $98-112\ \mu$ in diam.; sporules hyaline, filiform, straight or slightly curved, $20-40 \times 1\frac{1}{2}-2\ \mu$. On leaves of *Podophyllum peltatum*. Illinois and Ohio.

105. SEPTORIA POLYGALÆ, Pk. & Cke. 29th Rep. N. Y. S. Mus., p. 48; Sylloge III, p. 521.

"Perithecia black, minute, scattered or aggregated; sporules filiform, straight or slightly curved, $25-40\ \mu$ long," On *Polygala paucifolia*. New York.

106. SEPTORIA POLYGONORUM, Desm. Sylloge III, p. 555; Ellis, N. A. F., No. 531.

Spots small, light brown, subrotund, border purple, 2-3 millim. in diam.; perithecia light brown, lenticular, becoming concave, innate, barely prominent, epiphyllous, $100-120\ \mu$ in diam.; sporules hyaline, filiform, slightly flexuous, 4-5-guttulate, $25-40 \times 1-1\frac{1}{2}\ \mu$. On leaves of *Polygonum Pennsylvanicum*. Pennsylvania.

107. SEPTORIA PRUNI, Ellis. Am. Nat. X, p. 811; Sylloge III, p. 489; Ellis, N. A. F., 1151.

Spots dark brown, dry, subrotund, soon breaking out, 1-3 millim. in diam.; perithecia brown, immersed, epiphyllous, $60\ \mu$ in diam.; sporules hyaline, linear, ends obtuse, 4-6-septate, $30-50 \times 2\ \mu$. On leaves of *Prunus Americana*. Kentucky and Kansas.

108. SEPTORIA PSILOSTEGA, E. & M. Am. Nat. XVI, p. 1001; Sylloge III, p. 543.

Spots golden yellow, mostly occupying the margin of the leaves; perithecia yellow, very delicate, scattered, innate, slightly prominent, hypophyllous, $70-112\ \mu$ in diam.; sporules subhyaline, filiform, straight or curved, faintly triseptate, $60 \times 3\ \mu$, exuded in amber-colored masses. On leaves of *Galium pilosum*. New Jersey.

109. *SEPTORIA PULCHELLA*, B. & C. Grev. III, p. 8; Sylloge III, p. 494.

Spots pale red to nearly white, subcircular, one millim. in diam., border dark purple; perithecia light brown, innate, slightly prominent, amphigenous, $56\ \mu$ in diam.; sporules hyaline, cylindrical, curved, $35\text{--}40 \times 3\ \mu$ ("5 μ (?) long," Grev.) On leaves of *Andromeda ferruginea*. Alabama and Florida.

110. *SEPTORIA PURPURASCENS*, E. & M.

Spots purplish red, 2—5 millim. broad, often coalescing; perithecia black, subglobose, innate, slightly prominent, hypophyllous, scattered, several in a spot, $150\ \mu$ in diam.; sporules hyaline, cylindrico-clavate, often curved, 3-septate, $40\text{--}45 \times 3\ \mu$, exuding in a mass. On leaves of *Potentilla Norvegica*. New York.

111. *SEPTORIA PYROLÆ*, E. & M. Journ. Mycol. I, p. 100.

Spots brown, small, limited by the blackened veinlets; perithecia at first yellowish-white, becoming black, hypophyllous; sporules filiform, slightly curved, ends obtuse, $25\text{--}35 \times \frac{3}{4}\ \mu$. On leaves of *Pyrola secunda*. Lake Superior.

112. *SEPTORIA QUERCETI*, Thum. Bot. Gaz. V, p. 123; Sylloge III, p. 505.

"Spots large or small, suborbicular; perithecia black, shining, immersed, covered by the raised epidermis, but later, barely free, minute, punctiform, densely gregarious, hypophyllous; sporules hyaline, numerous, cylindrical, nearly straight or curved, ends obtuse, 2—4-septate, multinucleate, $18\text{--}22 \times 2\frac{1}{2}\text{--}3\ \mu$." On dying or dry leaves of *Quercus tinctoria*. South Carolina.

113. *SEPTORIA RAVENELII*, Thum. Sylloge III, p. 489; Rav. F. A., No. 508; Ellis, N. A. F., No. 747.

Spots light brown, irregular, 1—3 millim. in diam., border reddish purple; perithecia brown, soft, innate, a little prominent, scattered, few in a spot, hypophyllous, $160\ \mu$ in diam.; sporules hyaline, subfusiform, obscurely 3—4-septate, $40\text{--}70 \times 3\text{--}4\ \mu$, exuded in amber-colored threads. On leaves of *Prunus Caroliniana* and *P. serotina*. South Carolina to Pennsylvania.

114. *SEPTORIA RECTA*, B. & C. Sylloge III, p. 507.

"Perithecia black, occupying the whole surface of the leaves; sporules straight, linear, ends acutish, $25\ \mu$ long." On dead coriaceous leaves. South Carolina.

115. *SEPTORIA PHODODENDRI*, Cke. Sylloge III, p. 494.

"Spots orbicular, pallid, border black-purple; perithecia punctiform, aggregated or circinate; sporules filiform, $40\ \mu$ long. On leaves of *Rhododendron*. Maine.

116. *SEPTORIA RHODINA*, B. & C. Sylloge III, p. 483.

"Spots white, small, margin broad, black; perithecia central; sporules vermiform, flexuous, $75\ \mu$ long." On leaves of *Rhus Cotinus*. New England and New York.

(To be continued.)

NOTES ON FLORIDA FUNGI.--No. 14.

BY W. W. CALKINS, CHICAGO, ILLINOIS.

251. *POLYPORUS NIVOSUS*, B. & Br.--Found on dead gum trees along with *P. hemileucus*; rare.
252. *POLYPORUS LINDBLADII*, B. var. Very rare on old pine logs.
253. *POLYPORUS FERRUGINOSUS*, Fr.--Rare and only found once on an old log. Looks quite different from *P. obliquus*. The above three species have been passed upon by Dr. Cooke.
254. *KNEIFFIA AMBIGUA*, Karsten.--On an oak log; rare.
255. *DIATRYPELLA DEUSTA*, E. & M.--Abundant on palmetto stems.
256. *DIATRYPELLA VERRUCÆFORMIS*, Ehr.--On dead limbs.
257. *DIATRYPELLA OPACA*, Cke.--On dead holly.
258. *CONIOSPORIUM ARUNDINIS*, Cda.--On *Sabal* stems.
259. *UREDIO FICUS*, Cast.--Abundant on fig leaves.
260. *OIDIUM MEGALOSPORUM*, B.--Abundant on rotten logs in swamps.
261. *SEPTORIA HYDROCOTYLES*, E. & M.--Abundant.
262. *SEPTORIA SYMPLOCI*, E. & M.--On leaves of the sugar tree.
263. *SEPTORIA SERPENTARIA*, E. & M.--On *Olea* leaves.
264. *SEPTORIA NIPHOSTOMA*, B. & C.--On *Magnolia* leaves.
265. *TRABUTIA QUERCINA*, Fr. & R.--Abundant.
266. *MELANCONIUM SABAL*, Cke.--On *Sabal* stems.
267. *PUCCINIA HYDROCOTYLES*, Mont.--Abundant.
268. *MACROSPORIUM NERII*, Cke.--Abundant on fallen leaves of *Oleander*.
269. *FUSARIUM YUCCÆ*, Cke.--On *Yucca aloifolia* leaves.
270. *HELICOTRICHUM OBSCURUM*, Cda.--Abundant on fallen *Persea* leaves; very obscure, too.
271. *TREMELLA MESENTERICA*, Fr.--Occasional on dead limbs.
272. *TREMELLA FOLIACEA*, Pers.--Abundant on rotten limbs.
273. *PHYLLACHORA DEMERSA*, Cda.--On *Persea* leaves.
274. *PHOMA LEGUMINUM*, West.--On pods of *Glottidium*.
275. *PHOMA CLITORIACARPA*, Cke.--On pods of *Glottidium*.
276. *MELOGRAMMA FULIGINOSUM*, Ell.--On *Sabal* stems.
277. *RUSSULA EMETICA*, Fr.--Abundant in woods.
278. *ENDOTHIA GYROSA*, Sw.--On old oak limbs; abundant.
279. *GEASTER HYGROMETRICUS*, Pers.--Very common in sandy fields.
280. *ANTHOSTOMELLA MINOR*, E. & M.--A new species. Journ. Mycol., Vol. III, p. 43. Common on *Sabal* stems.

NEW LITERATURE.

BY W. A. KELLERMAN.

"GERMINATION OF ERGOT FROM THE WILD RYE." B. D. Halsted, in Bulletin of the Iowa Agricultural College, Botanical Dept., November, 1886.

Ergotted grains from *Elymus Canadensis* were placed in a large flower pot on March 10th. Two months later, growth became evident

and in a week the heads were formed and became stalked. On May 31st, the grains had mature heads and were then examined microscopically. The stems were two to three centimetres long and the ascigerous heads two to three millimetres in diameter and sphaeroidal. The asci were $4 \times 230 \mu$ and 8-spored; the spores were $1 \times 120 \mu$. Saccardo gives the size of spores of *Claviceps purpurea* (Fr.) as 50—76 μ . Dr. Halsted finds that the ascigerous stems from the cultivated rye as figured by Dr. Winter (Pilze II, 91) are much shorter and the heads larger than those mentioned above. That the species of ergot infecting the wild rye is the same as that of the cultivated rye, *Claviceps purpurea*, remains an open question.

"NOTES UPON THE PERONOSPOREÆ FOR 1886." l. c.

"NOTES UPON THE USTILAGINEÆ." l. c.

"THE ASH-LEAF RUST." l. c.

"THE CLOVER MOULD (*Cladosporium*). l. c.

"FUNGI OF FOREST TREES." l. c.

"COLORADO FUNGI." July, 1886. l. c.

Twenty-five species are enumerated, of these, the following new: *Tubercularia Lupini*, Farlow, *in litt*, on *L. Kingii*, Watson, Gunnison, Colo.; *Puccinia* sp., on *Artemisia Mexicana*, Willd., *Aecidium* and *Puccinia*. The *æcidia* are long and slender and perhaps new. Of the *Puccinia*, Dr. Farlow says: "It is not the usual form on *Artemisia* and does not exactly correspond to anything I have examined. * * I think it may be new and the *æcidium* may very likely be its *æcidium*." A parasitic fungus was found on *Pseudotsuga Douglasii*, Carr, causing distortions called "eagle nests." Of this, Dr. Farlow says: "It has almost a greater similarity to some of the *Cœomata* and *Abies* than to a *Peridermium*; but it has a peridium more delicate than in any species known. It seems to be new. In habit and the distinctions produced, it reminds one of *Aecidium corruscens*, Fr., but unless it changes very much as it grows older, it cannot be that species. It is characterized by the size of its spores and size and thin markings of peridial cells."

"RELATION BETWEEN 'CEDAR-APPLES' AND THE LEAF RUST ON THE WILD CRAB APPLE." l. c.

"A PARTIAL LIST OF IOWA POWDERY MILDEWS." A. S. Hitchcock. l. c.

"FUNGI INJURIOUS TO GRASSES AND CLOVERS." Wm. Trelease, St. Louis, Mo. From "Beal's Grasses of North America."

A popular account, with illustrations of fourteen species, covering pp. 413-431.

"UEBER EINIGE AUF RUBUS ARCTICUS L. VORKOMMENDE PARASITISCHE PILZE." Af G. Lagerheim. Separataftryck ur Botaniska Notiser, 1887.

"ESPERIMENTI SUL PARASITISMO DELL' AGARICUS MELLEUS, VAHL." Di L. Savastano. Nuovo Giornale Botanico Italiano, April, 1887.

"BOTANICAL MANUALS FOR STUDENTS." Chas. E. Bessey. American Naturalist, April, 1887.

"ST. GEORGE'S MUSHROOM, AGARICUS GAMBOSUS," Fr. Worthington G. Smith, Gardner's Chronicle, April 23, 1887.

"AN INTRODUCTION TO THE STUDY OF LICHENS." By Henry Willey. Pp. 72, ten plates.

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No. 7.

ENUMERATION AND DESCRIPTION OF THE SEPTORIAS OF NORTH AMERICA.

BY GEORGE MARTIN, M. D.

(Continued from page 69.)

117. *SEPTORIA RIBIS*, Desm. Sylloge III, p. 491; Ellis, N. A. F., 1148.

Spots subangular, gray, dry, 1—4 millim. in diameter, border brown, narrow, raised; perithecia brown, lenticular, becoming depressed, innate, barely prominent, clustered, 2—3 in a spot, epiphyllous, 70—80 μ in diameter; sporules hyaline, linear, curved, plurinucleolate, 30—50 x $1\frac{1}{2}$ —2 μ . On leaves of *Ribes*. Kentucky and Ohio.

118. *SEPTORIA RUBI*, West. Sylloge III, p. 486; Ellis, N. A. F., 1150; *S. Rubi*, B. & C., Rav. F. A., 507.

Spots subcircular, pallid, one millim. in diameter, border purple; perithecia brown-black, lenticular, becoming depressed, semi-immersed, few in a spot, amphigenous, 70—80 μ in diameter; sporules hyaline, filiform, curved, obscurely nucleolate or septate, 30—50 x $1\frac{1}{2}$ —2 μ . On leaves of *Rubus*. Common.

119. *SEPTORIA RUBI*, West., var. *PALLIDA*, Ell. & Holway.

Spots tawny, subangular, limited by the veinlets, 1—2 millim. in diameter; perithecia brown, lenticular, innate, prominent, few, scattered, mostly epiphyllous, 80 μ in diameter; sporules hyaline, filiform, entire, 30—35 x 1 μ , sometimes nucleolate. On leaves of *Rubus hispidus*. Minnesota.

Differs from *S. Rubi* in color of the spots and size of sporules; it may be from age.

120. *SEPTORIA SALLIÆ*, Gerard. Bull. Torrey Bot. Club V, p. 27; Sylloge III, p. 478.

“Spots large, roundish, pallid, circumscribed by a reddish-brown line; perithecia minute, black, scattered; sporules simple, rod-shaped, hyaline, bent, 18 x $2\frac{1}{2}$ μ .” On leaves of *Acer saccharinum*. New York.

121. SEPTORIA SALICIFOLIA (Trelease), E. & Everh., N. A. F., 1604. (*Ascochyta salicifolia*, Trelease, Journ. Mycol. I, p. 14.)

Spots numerous, round or subangular, in part limited by the veinlets, deep flesh-colored, becoming tawny, one millim. in diameter; perithecia the same color, changing to light amber, innate, slightly prominent, hypophyllous, 165—200 μ in diameter; sporules hyaline, fusiform, crescentic, 1-septate, 3—4-guttulate, 30—50 x 2—3½ μ . On leaves of *Spiraea salicifolia*. Wisconsin and Kansas.

122. SEPTORIA SALICINA, Pk. 25th Rep. N. Y. S. Mus., p. 87; Sylloge III, p. 502.

"Spots suborbicular, brown, dry in the center; perithecia minute, brown, collapsing, leaving a peziza-like disk; sporules filiform, curved, obscurely septate, 40—60 μ long." On leaves of *Salix lucida*. New York.

123. SEPTORIA SAMBUCINA, Pk. 28th Rep. N. Y. S. Mus., p. 58; Sylloge III, p. 492.

"Spots dry, whitish, surrounded by a broad, dark margin, brown or purplish-brown on the lower surface; perithecia epiphyllous, few, minute; sporules long, filiform, more or less curved, obscurely 3—6-septate, 50—75 μ long." On leaves of *Sambucus Canadensis*. New York.

124. SEPTORIA SCLERANTHI, Desm. Sylloge III, p. 518; Ellis, N. A. F., 1125.

Spots obliterated or none; perithecia black, subglobose, innate, prominent, amphigenous, 100 μ in diameter; sporules hyaline, linear, curved, indistinctly nucleolate or septate, 30—35 x 3 μ . On leaves of *Scleranthus annuus*. New Jersey.

125. SEPTORIA SCROPHULARIÆ, Pk. 28th Rep. N. Y. S. Mus., p. 57; Sylloge III, p. 534.

"Spots minute, dry, white, with a purple-brown border; perithecia few, superficial; sporules hyaline, filiform, curved, 25—40 μ long." On leaves of *Scrophularia nodosa*. New York. (Whether this is distinct from *S. Scrophulariæ*, West., Exsic., No. 936, we cannot say.)

126. SEPTORIA SERPENTARIA, E. & M. Am. Nat. XVIII, p. 70; Ellis, N. A. F., 1120.

Spots red-brown, dry, thin, bordered in part by the veinlets, subangular, one millim. in diameter; perithecia black, subglobose, innate, prominent, 1—4 in a spot, epiphyllous, 150 μ in diameter; sporules subhyaline, cylindrical, curved, 80—108 x 4 μ . On young leaves of *Quercus laurifolia*. Florida.

127. SEPTORIA SILENICOLA (E. & M.), Sacc. Sylloge III, p. 516. *S. Silenes*, E. & M., Am. Nat. XVI, p. 1001; Ellis, N. A. F., 1141.

Spots light yellow, subcircular, dry, 1—1½ millim. in diameter; perithecia brownish-yellow, delicate, innate, scattered, 56 μ in diameter; sporules yellowish, cylindrical, curved, 3-septate, 48 x 3 μ . On leaves of *Silene stellata*. Pennsylvania.

There is a *Septoria Silenes*, West., not identical with this, which has precedence.

129. SEPTORIA SISYMBRII, Ellis. Am. Nat. XVI, p. 811; Sylloge III, p. 520; Ellis, N. A. F., No. 1142.

Spots whitish, dry, irregular, large; perithecia black, delicate, innate, erumpent, amphigenous, scattered, 3—4 in a cluster, 112—150 μ in diameter; sporules white, cylindrical, 1—2-septate, often curved, ends obtuse, 30—40 x $2\frac{1}{2}$ — $3\frac{1}{2}$ μ . On leaves of *Sisymbrium*. Kentucky.

130. SEPTORIA SMILACINÆ, E. & M. Am. Nat. XVI, p. 1001; Sylloge III, p. 574; Ellis, N. A. F., 1146.

Spots gray, oblong, 3—5 millim., border dark pink; perithecia light brown, conoid, innate, prominent, mostly covered by the epidermis, generally epiphyllous, 112 μ in diameter; sporules hyaline, filiform, guttulate, 63—114 x 3 μ . On leaves of *Smilacina*. Pennsylvania.

NOTE.—The specific name is badly chosen, as there is already a *Septoria smilaina*, Dur. & Mont., but that is on *Smilax* and has much shorter, 4-septate spores. This is more nearly allied to *S. brunneola*, Niessl, which, however, is on different-colored spots and has narrower spores.—EDS.

131. SEPTORIA SOLIDAGINIS, Thum. Sylloge III, p. 546; Rav. F. A., 784.

Spots light brown or pallid, dry, round, one millim. in diameter, border purple, broad, often coalescing; perithecia black, subglobose, innate, slightly prominent, few in a spot, epiphyllous, 100—130 μ in diameter; sporules hyaline, linear, "subacute, septate in the middle," curved or straight, 30—35 x $2\frac{1}{2}$ μ , or "15 x 4," (Sylloge.) On leaves of *Solidago puberula* and *Solidago odora*. South Carolina.

132. SEPTORIA SONCHIFOLIA, Cke. Sylloge III, p. 552; Rav. F. A., No. 31.

Spots brown, round or elongated; perithecia innate; sporules hyaline, linear, mostly straight, 20—24 x 2 μ , discharged on the upper surface of the leaves. On *Sonchus asper*. South Carolina.

133. SEPTORIA SPECULARIÆ, B. & C.

In Berkley's Notices of North American Fungi, Grev. III, pp. 8 and 9, are two Nos. (437 and 439) with this name. One of these (No. 439), Saccardo, in Syll. III, p. 544, has designated as *Septoria specularina*, B. & C. Spots tawny, indefinite or obsolete; perithecia light brown, subglobose, at length more or less depressed, prominent, scattered over the leaves and stems, 80—100 μ in diameter; sporules hyaline, nearly straight, nucleolate, 25—40 x 1 μ . This description applies to the specimens in Rav. F. Am., 262 (on *Specularia*, So. Car.), and to specimens from Kansas on *Specularia perfoliata*. In Grevillea, No. 439, it is said to grow on *Specularia Ludoviciana*.

134. SEPTORIA SPECULARIÆ, B. & C., No. 437, in Berkley's Notices, is described as follows:

"Spots pallid or obsolete; perithecia prominent, scattered; sporules filiform, with two points of contrary flexure. On leaves of *Specularia perfoliata*. Pennsylvania. Michener, No. 4328."

NOTE.—Whether the two Nos. in Berkley's Notices (437 and 439) refer to the same thing, we are unable to state definitely, but from the identity of the Kansas specimens with those in Rav. F. Am., we suspect the two are not distinct.—EDS.

135. SEPTORIA SPICULOSA, E. & Hol.

Spots brown, large, irregular, with lighter brown, coalescing margins; perithecia brown, subglobose, innate, prominent, thickly scattered, 90—100 μ in diameter; sporules hyaline, linear, straight, entire, 30—36 x 1—1½ μ . On leaves of *Symplocarpus foetidus*. Wisconsin.

136. SEPTORIA SPHÆRELLOIDES, E. & K. Am. Nat. XVII, p. 1165.

Spots black or obsolete; perithecia subglobose, brown-black, innate, covered by the epidermis, scattered or aggregated, 80—100 μ ; sporules hyaline, filiform, nearly straight, nucleolate, 15—22 x 1—1½ μ . On dead stems of *Hypericum corymbosum*. Kansas.

137. SEPTORIA STENOSIPHONIS, E. & K. Bull. Torrey Bot. Club XI, p. 115; Ellis, N. A. F., No. 1603.

Spots red-brown, 1—2 millim. in diameter, sometimes coalescing, occasionally becoming pale or white in the center; perithecia brown-black, subglobose, innate, hypophyllous, visible on both surfaces, mostly clustered in the center of the spots, 90 μ in diameter; sporules hyaline, yellowish, filiform, slightly curved, entire, 18—30 x 1 μ . On *Stenosiphon virgatus*. Kansas.

138. SEPTORIA STIGMA, B. & C. Sylloge III, p. 494.

"Spots white; perithecia punctiform; sporules linear, short, 15 μ long." On leaves of *Symplocus*. Alabama.

139. SEPTORIA SUBMACULATA, Winter. Fungi Europ., 3193; Ellis & Evrh., N. A. F., 1614.

Spots tawny, subangular, 1—2 millim. in diameter, limited by the veinlets, border dark purple, often coalescing on the upper surface, no border on the under; perithecia brown-black, subglobose, innate, barely visible, few in a spot, epiphyllous, 80 μ in diameter; sporules hyaline, filiform, subflexuous, entire, 16—28 x 1—1½ μ . On leaves of *Fraxinus Americana*. Missouri.

140. SEPTORIA SYMPHORICARPI, E. & Everh. Journ. Mycol. II, p. 38.

Spots white, suborbicular, 1—2 millim. in diameter, border brown; perithecia black, sublenticular, prominent, 1—5 in a spot, epiphyllous; sporules subcylindrical, a little attenuated below, nearly straight, faintly 1—3-septate, 20—40 x 2 μ (mostly 30—40 x 2). On leaves of *Symphoricarpus*. Dakota.

141. SEPTORIA SYMPLOCI, E. & M. Am. Nat. XVII, p. 1002; Sylloge III, p. 494; Ellis, N. A. F., No. 1136.

Spots white, subrotund, 1—1½ millim. in diameter, border brown and a little raised; perithecia brown, subglobose, semi-immersed, hypophyllous, scattered irregularly, 112—126 μ in diameter; sporules hyaline, cylindrico-clavate, spuriously 2—3-septate, curved, 30—45 x 3 μ . On leaves of *Symplocus tinctoria*. Florida.

142. SEPTORIA TENELLA, Ck. & Ellis. Grev. VIII, p. 11; Sylloge III, p. 562; Ellis, N. A. F., 529.

Spots none; perithecia brown to black, flattened, innate, barely prominent, scattered, very delicate or imperfect, 50—65 μ in diameter; sporules hyaline, linear or subfusiform, mostly straight, ends subacute, 18—40 x 2½ μ . On *Festuca tenella*. New Jersey.

143. SEPTORIA TENUISSIMA, Winter. Journ. Mycol. I, p. 122.

“Spots minute, round or subangular, ½—1½ millim. broad, dry, white, surrounded by a brown-black, elevated line and an indeterminate ring of green-brown; perithecia black, globose, punctiform, erumpent, mostly epiphyllous, 60—70 μ in diameter; sporules hyaline, filiform, often flexuous, not distinctly septate, 20—28 x 1 μ .” On leaves of *Boehmeria cylindrica*. Missouri.

144. SEPTORIA TOXICODENDRI, Curt.

Spots tawny, subangular, 3—5 millim. broad, border brown, raised, narrow; perithecia black, convex, prominent, clustered, hypophyllous, 220—240 μ in diameter; sporules hyaline, cylindrical, curved, 3—5-septate, 35—40 x 3 μ . On *Rhus Toxicodendron*. Pennsylvania.

Mentioned in Peck 29th Report N. Y. S. Mus.; no description.

145. SEPTORIA TRILLII, Pk. Bot. Gaz. IV, p. 170; Sylloge III, p. 573; Ellis, N. A. F., 1605.

Spots gray or whitish, suborbicular, five millim. broad; perithecia black, innate, prominent, thickly clustered, epiphyllous, 100 μ in diameter; sporules hyaline, filiform, straight or flexuous, faintly 3—4-septate, ends subacute, 30—45 x 1½ μ , exuding in white threads. On *Trillium recurvatum*. Missouri.

146. SEPTORIA UNICOLOR, Winter. Journ. Mycol. I, p. 123.

“Spots angular or subrotund, olive, margin of the same color, mostly determinate, five millim. or less in diameter; perithecia globose, thinly membranaceous, minute, scattered, epiphyllous; sporules hyaline, filiform, often flexuous, entire or indistinctly septate, 26—32 x 1 μ .” On leaves of *Mulgedium acuminatum*. Missouri.

147. SEPTORIA VERBENÆ, Rob. et Desm. Sylloge III, p. 537; Bull. Torrey Bot. Club IV, p. 48; Ellis, N. A. F., No. 1140.

Spots white, subcircular, one millim. in diameter, border brown-red to purple; perithecia dark, innate, slightly prominent, mostly solitary in the spots, epiphyllous, 80—100 μ in diameter; sporules hyaline, linear, straight or curved, pluri-guttulate, 40—50 x 1—3 μ . On leaves of *Verbena angustifolia* and *Verbena hastata*. New York, Kentucky and Kansas.

148. *SEPTORIA VERBASICOLA*, B. & C. Sylloge III, p. 533, no description; Ellis, N. A. F., 749.

Spots round, dry, thin, 1—3 millim. in diameter, border broad, dark purple; perithecia black, but few in a spot, clustered, innate, slightly prominent, epiphyllous, but visible beneath, 80—85 μ in diameter; sporules hyaline, filiform, curved, 20—40 x 1½ μ . On leaves of *Verbascum Blattaria*. Pennsylvania and New York.

149. *SEPTORIA VESTITA*, B. & C. Grev. III, p. 12; Sylloge III, p. 559.

“Perithecia rather prominent, flattish, surrounded by a mealy border; sporules slender, curved, 12 μ long.” On fruit of *Cucurbita*. Pennsylvania.

150. *SEPTORIA VIOLÆ*, West. Sylloge III, p. 518; Ellis, N. A. F., No. 1601.

Spots pallid, round, thin, dry, 1—2 millim. in diameter, border broad, red-brown; perithecia black, innate, slightly prominent, few in a spot, scattered, epiphyllous, 80—95 μ in diameter; sporules hyaline, linear, nearly straight or flexuous, faintly 3—4-septate, ends subacute, 40—50 x 1½ μ . On *Viola lanceolata*. Massachusetts.

151. *SEPTORIA VIRIDE-TINGENS*, Curt. 23d Rep. N. Y. S. Mus., p. 55; Sylloge III, p. 572; E. & Evh., N. A. F., No. 1612.

Spots obscure, vague, confluent, mostly tinged with green, leaves yellow; perithecia dull amber, rarely becoming black, lustre waxy, innate, prominent, thickly clustered, mostly epiphyllous, 110—130 μ in diameter; sporules hyaline, linear, slightly flexuous, entire or indistinctly 3—4-guttulate, 33—40 x 1½ μ , exuded in amber-colored threads. On leaves of *Allium tricoccum*. New York and Wisconsin.

152. *SEPTORIA VIRGAUREÆ*, Desm. Epiphyllous; spots suborbicular, arid and whitish; perithecia minute, convex, dark brown, with a broad opening above; sporules filiform, slightly curved, subobtuse at the ends, 75—80 x 1½ μ , faintly nucleolate, hyaline. On leaves of *Solidago*. Missouri. B. T. Galloway.

153. *SEPTORIA WALDSTEINIÆ*, Pk. & Cke. 31st Rep. N. Y. S. Mus., p. 43; Sylloge III, p. 511.

“Spots minute, unequal, suborbicular, dry, margin purple-brown or black; perithecia minute, few, black, epiphyllous; sporules straight, 25 μ long.” On leaves of *Waldsteinia fragarioides*. New York.

154. *SEPTORIA WILSONI*, Clinton. Pk., 28th Rep. N. Y. S. Mus., p. 57; Sylloge III, p. 533.

“Spots scattered, suborbicular, dry, white or pallid, border brown; perithecia minute, black; sporules filiform, curved, nucleolate, 35—50 μ long.” On leaves of *Chelone glabra*. New York.

155. *SEPTORIA WYETHIÆ*, Harkn. Fungi California, p. 11; Sylloge III, p. 547.

“Perithecia amphigenous, occupying large portions of the leaves; sporules linear, obscurely septate, 56 x 6—8 μ .” On leaves of *Wyethia mollis*. California.

156. SEPTORIA XANTHII, Desm. Sylloge III, p. 554.

Spots light brown, round or oblong, 3—5 millim. broad, border yellow-green, broad, indefinite; perithecia black, subglobose, few, scattered, prominent, epiphyllous, 75—80 μ in diameter; sporules hyaline, linear, straight or curved, guttulate or obscurely 3-septate, 33—40 x $1\frac{1}{2}$ μ . On leaves of *Xanthium Strumarium*. Delaware.

157. SEPTORIA XANTHIIFOLIA, E. & K. Am. Nat. XVII, p. 1164; Ellis, N. A. F., No. 1128.

Spots light brown, irregular, scattered, one millim., border indefinite; perithecia black, minute, slightly prominent, rather numerous, epiphyllous, 70 μ in diameter; sporules hyaline, yellowish, linear, slightly curved, faintly nucleolate, 20—35 x $1\frac{1}{2}$ —2 μ . On leaves of *Iva xanthiifolia*. Kansas.

158. SEPTORIA YUCCÆ (Schwz.) Sacc. Sylloge III, p. 572. (*Sphaeria Yuccæ-gloriosæ*, Schwz.)

"Perithecia globose, innate, covered by the gray, separating epidermis, ostiola punctiform; sporules hyaline, linear, entire, 25—45 μ long." On dead leaves of *Yucca gloriosa*. Pennsylvania.

159. SEPTORIA MELANDRII, Pass.

Spots amphigenous, orbicular, 2—3 millim. in diameter, yellow rust color, becoming whitish and with a darker border, the greater part of the leaf becoming rusty yellow; perithecia innate, opening above, but scarcely prominent and easily overlooked; sporules filiform, nucleolate, nearly hyaline, 60—70 x 2 μ . On *Lychnis vespertina*. Racine, Wis., July, 1886. Dr. J. J. Davis.

160. SEPTORIA ACERELLA, Sacc. Syll. III, p. 479.

Spots amphigenous, minute, subangular, numerous, white, bordered with reddish brown; perithecia few (1—4) on a spot, black, minute, lenticular, visible on both sides of the leaf; sporules curved, subcontinuous, hyaline, 25—30 x $1\frac{1}{2}$ —2 μ . On *Negundo aceroides*. Missouri. B.T. Galloway.

161. SEPTORIA CARICINELLA, Sacc. & Roum.

Spots amphigenous, white, with a rusty-colored border, orbicular or subelongated, 2—3 millim. in diameter; perithecia black, lenticular, 100—150 μ in diameter; sporules linear, 45—55 x $1\frac{1}{2}$ μ . On leaves of *Carex cephaloidia* (?). Racine, Wis., July, 1886. Dr. J. J. Davis.

In the Sylloge, the sporules are said to be 60—70 x $1\frac{1}{2}$ μ , but in two perithecia examined, on Roumeguere's specimen in Fungi Gallici, none were found over 50 μ long.

162. SEPTORIA POLEMONICOLA, E. & M. On leaves of *Polemonium reptans*. Perryville, Mo., July, 1885. Rev. C. H. Demetrio.

Spots amphigenous, but more distinct above, small ($\frac{1}{2}$ —1 millim.), white, definite, numerous; perithecia epiphyllous, minute, sublenticular, dark brown, mostly only a few on a spot; sporules filiform, nearly straight, yellowish-hyaline, nucleolate, mostly 25—35 x 1 μ . The leaves have a sickly, yellow look.

S. Polemonii, Thum., is said to be on "large, pale, ochraceous spots," with sporules 24—30 x 2 μ .

163. SEPTORIA URTICÆ, Desm.

"Spots amphigenous, pale, orbicular or irregular; perithecia epiphyllous, very minute, numerous, dark, perforated above; sporules elongated, very slender, curved or flexuous, obsoletely nucleolate, $40-50 \times 2 \mu$, hyaline." Reported by Peck (33d Rep., p. 25) as found on leaves of *Laportea Canadensis*, in New York state.

164. SEPTORIA CARYÆ, E. & E.

Spots amphigenous, chestnut-brown above, paler below, irregular in outline, definite but border not prominent and the adjacent portion of the leaf more or less tinged with yellow; perithecia abundant, minute, black, amphigenous; sporules $12-16 \times 1\frac{1}{4}-1\frac{1}{2} \mu$, mostly rather strongly curved and nucleate. On leaves of *Carya*. Delaware, October, 1886. A. Commons.

165. SEPTORIA PLANTAGINEA, Pass., var. B. Sacc. (?)

Spots dull brown, definite, subelongated ($1 \times \frac{1}{4}$ cm.); perithecia minute, scarcely prominent, more conspicuous above; sporules, $15-25 \times 1-1\frac{1}{4} \mu$, more or less curved, nucleolate, hyaline. On leaves of *Plantago major*. Delaware. A. Commons. Differs from the description in Syll. III, p. 554, in its shorter sporules.

166. SEPTORIA ALNICOLA, Cke.

"Spots pallid, brown or tawny, rounded, about one fourth of an inch in diameter; perithecia minute, scattered over the spots, semi-innate, black, pierced at the apex; sporules oblong, straight or curved." Prof. C. H. Peck, in 38th Rep. N. Y. State Mus., p. 97, reports this species as found on leaves of *Alnus incana*, at Caroga, N. Y.

167. SEPTORIA PYRI, Cast. Mentioned in 23d Rep. N. Y. State Mus., p. 54, as found by Dr. Howe on leaves of *Pyrus Malus*, is probably the same as *S. pyricola*, Desm., described by Saccardo in Syll. III, p. 487, as follows:

Epiphyllous; spots dry, grayish-white, subshining, small, scattered, subrotund or irregular, with a narrow, brown margin; perithecia few, minute, subprominent, black, pierced above; cirrhi whitish or olivaceous; sporules filiform-elongated, somewhat curved, 2-septate, multinucleate, $60 \times 3\frac{1}{2}$, pale olivaceous.

168. SEPTORIA GALEOPSISIDIS, West. Sacc. Syll. III, p. 539.

"Spots hypophyllous, greenish or brown, irregular, angular, limited by the veinlets of the leaf; perithecia brown, punctiform, scattered; sporules cylindrical, straight or flexuous, $30-40 \times 1-1\frac{1}{4} \mu$." Reported by Prof. Peck in 34th Rep. N. Y. State Mus., p. 44, on leaves of *Galeopsis tetrahit*, in the Catskill mountains.

169. SEPTORIA SICYI, Pk. 35th Rep. N. Y. State Mus., p. 137.

"Spots small, suborbicular, scattered or rarely subconfluent, whitish or cinereous, arid; perithecia few, epiphyllous, blackish; spores filiform, straight or curved, $20-30 \mu$ long. On living leaves of *Sicyos angulata*. Albany, N. Y. June."

170. SEPTORIA MUSIVA, Pk. 35th Rep. N. Y. State Mus., p. 138.

"Spots small, numerous, angular, brown, usually obscurely mottled by minute angular patches of paler color; perithecia few, epiphyllous, depressed, black or blackish; sporules cylindrical, slightly curved, colorless, sometimes obscurely triseptate, 30—45 μ long. On living leaves of *Populus monilifera*. Albany, N. Y., July. This species differs from *S. Populi*, Desm., in the character of the spots, which are variegated like mosaic work, and in the septation of the spores."

171. SEPTORIA CALYSTEGIÆ, West.

"Spots small, subrotund, brown, slightly raised, so as almost to resemble a stroma; perithecia 1—3, innate, mostly hypophyllous, pale, opening by an apical pore; sporules cylindrical, slightly curved, 30—45 x 4—5 μ , rounded at each end, 3—5-septate and multinucleate, hyaline." Sacc. Syll. III, p. 537. On living leaves of *Calystegia sepium*. Albany, N. Y. C. H. Peck, in 35th Rep., p. 137.

172. SEPTORIA GLAUCA, Ck. Rav. F. Am., No. 93.

Spots cinereous, with a narrow, darker border, 2—5 millim. in diame., irregular in shape; perithecia sublenticular, thickly scattered over the spots. The specimen in the collection referred to is (in my copy) barren.

173. SEPTORIA PUNICEI, Pk. 38th Rep. N. Y. State Mus., p. 97.

"Spots 2—4 lines broad, indefinite, blackish-brown above, brown or reddish-brown below; perithecia hypophyllous; sporules very long, flexuous, filiform, white in the mass, 10—15 μ long. On living leaves of *Aster puniceus*. Caroga, N. Y., July."

174. SEPTORIA FUMOSA, Pk. 38th Rep., p. 98.

"Spots angular or irregular, often confluent, smoky-brown or grayish-brown with a darker margin; perithecia epiphyllous, 7—9 μ in diameter, black; sporules filiform, 30—50 μ long. On living or languishing leaves of *Solidago Canadensis*. Albany, June. The sporules are shorter than those of *S. Virgaureæ*."

175. SEPTORIA GEI, Rob. & Desm. Sacc. Syll. III, p. 510.

"Spots orbicular or irregular, pale brown, becoming dry and cinereous in the center, with a dark border; perithecia epiphyllous, numerous, dark brown, hemispheric, collapsing; sporules filiform, acute at each end, 30 x 1½ μ , continuous, subhyaline." On *Geum Virginianum*. Guilderland, N. Y., July. Peck, in 33d Rep., p. 25.

176. SEPTORIA EPILOBII, West. Sacc. Syll. III, p. 513.

Spots olivaceous, small (one millim.), scattered, becoming whitish above, with an obscure, darker border, and generally surrounded with a purplish stain; perithecia innate, scarcely visible; sporules nearly straight or only slightly curved, 20—35 x 1½ μ , yellowish-hyaline, continuous, very obscurely nucleolate.

This description, drawn up from specimens on *Epilobium coloratum*, collected in Wisconsin by Trelease & Pammel and in Delaware by A. Commons, differs from that in Sylloge in the shorter sporules and spots, not limited by the veinlets, but orbicular or nearly so.

177. SEPTORIA LAPPARUM, Sacc. Syll. III, p. 551.

Spots small (one millim.), scattered, subangular, definite, rusty brown at first, becoming white; perithecia scattered, lenticular, light brown, 75—100 μ in diameter, mostly epiphyllous; sporules subfusoid, nearly straight, continuous, hyaline, 20—25 x 1 $\frac{1}{4}$ μ . On leaves of *Lappa*. Madison, Wis. Trelease and Seymour.

(To be continued.)

NOTES ON FLORIDA FUNGI.--No. 16.

BY W. W. CALKINS, CHICAGO, ILLINOIS.

281. STICTIS QUERCIFOLIA, C. & E.—On leaves of *Quercus virens*; not abundant.

282. MICROTHYRIUM SMILACIS, De Not.—Common on *Smilax* stems.

283. PROTOSTEGIA MAGNOLIÆ, Cke.—Abundant on leaves.

284. LOPHODERMium MACULARE, Fr.—Common on leaves of *Magnolia*.

285. DOTHIDEA SCUTELLA, B. & C.—Very common on fallen leaves of *Magnolia*.

286. DOTHIDEA PRINGLEI, Pk.—On leaves of *Yucca aloifolia*.

287. DOTHIDEA COCODES, Lev. (*D. Cubensis*, B.)—A fine tropical species, found on fallen *Osmanthus* leaves.

288. DERMATEA SABALIDIS, E. & M.—Rare on the petioles of *Sabal Palmetto*. The palmetto family is remarkable for numerous species of fungi.

289. RHYSTISMA ANDROMEDÆ, Sw.—Abundant on fallen leaves.

290. RHYSTISMA SOLIDAGINIS, Sw.—On *Solidago*.

291. LACTARIUS VIETUS, Fr.—Common on old logs in damp woods.

292. LYCOPERDON GEMMATUM, Batsch., var. *papillatum*.—Occasional in groups on old logs in damp places.

293. LYCOPERDON WRIGHTII, B. & C.—On the ground in oak openings; not common.

294. CORTINARIUS OPIMUS, Fr.—Rare on pine stumps.

295. HYGROPHORUS EBURNEUS, Fr.—On the ground in woods.

296. HEXAGONA SERICEO-HIRSUTA, Kl.—Very rare; found on a dead limb of *Juniperus*.

297. PHALLUS RAVENELII, B. & C.—Abundant in oak woods and old yards.

298. LINOSPORA FERRUGINEA, E. & M.—On fallen leaves of *Andromeda*.

299. POCILLUM AMERICANUM, Cooke.—On leaves of *Quercus virens*.

300. HYPODERMA ILICINUM, Duby.—Abundant on oak leaves.

NEW LITERATURE.

BY W. A. KELLERMAN.

“UEBER LEPTOSPHERIA NIGRANS” (Rob. et Desm.) L. Fuckelii Niessl und verwante Arten. J. Niessl. Hedwigia, Mar. u. Apr., 1887.

“NACHTRÄGE UND BERICHTIGUNGEN ZU SACCARDO'S SYLLOGE FUNGORUM, VOL. I, II.” Von Dr. G. Winter.

“SOME AUSTRALIAN FUNGI.” By M. C. Cooke. Grevillea, June, 1887.

“NEW BRITISH FUNGI.” By M. C. Cooke. l. c.

“NEW SPECIES OF RAVENELIA.” l. c.

“RAVENELIA VERRUCOSA, Cke. & Ellis.—Hypophylla ; uredosporis, globosis, asperulis, luteis (16 μ) ; teleutosporis in glomerulos hæmisphæricos congestis (80 μ) ; glomerulis (sporis 20), stipitatis, cum lobulos (circa 8), hyalinos circumdatis ; teleutosporis cuneatis ad apicem asperulis, atrofuscis (20 μ diam.) On leaves of *Lecania* sp.? Mexico (J. B. Ellis.)

It differs from *R. stictica* in not being sessile, in the hyaline lobules being larger and more conspicuous and the warts smaller. This is the only species with which it could be confounded, and from this it seems to be distinct.

“SOME NEW BRITISH DISCOMYCETES.” By W. Phillips, F. L. S. l. c.

“BRITISH PYRENO MYCETES. A PRELIMINARY LIST OF KNOWN SPECIES.” By G. Masee ; continued. l. c.

“SYNOPSIS PYRENO MYCETUM.” Continued. l. c.

“HEMIARCYRIA CHRYSOSPORA, LISTER.” By Arthur Lister. l. c.

“FUNGUS OF ANEMONE BEDS. PEZIZA TUBEROSA, BULL.” Worthington G. Smith, Gardener's Chronicle, May 28, 1887.

CORRECTIONS.

In North American Fungi, Cent. XIX (No. 1889), *Ustilago* “*subiculosa*,” Kuhn, should be *U. subinclusa*, Kornicke.

No. 1869 is no doubt what Fekl. in his Enumeratio-Fungorum Nasoriæ published as *Uromyces Prunorum*, but, as Dr. Winter has pointed out to us, is not a true *Uromyces* but only the uredo form of *Puccinia Prunorum*, Lk., to which Fuckel himself (Symb. Myc., p. 49) afterwards referred it.

No. 1878. At the time this was issued, we overlooked the fact that it had already been distributed under another name, *Chrysomyxa albida*, Kuhn. See Rab. Winter Fung. Euro., No. 3015.

The following corrections to be made in this JOURNAL : On p. 52, 7th line from top, for *Erigerontes* read *Erigerontis* ; on p. 53, 7th line from top, for *paniflora* read *pauciflora* ; on p. 53, 13th line from top, for *Cupbua* read *Cuphea* ; on p. 57, 2d line from bottom, for *Cerryana* read *Therryana* ; on p. 69, 8th line from bottom, for *Phododendri* read *Rhododendri*.

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MANHATTAN, KANSAS, AUGUST, 1887.

No. 8.

ENUMERATION AND DESCRIPTION OF THE SEPTORIAS OF NORTH AMERICA.

BY GEORGE MARTIN, M. D.

(Continued from page 82.)

178. SEPTORIA PHLOGIS, Sacc. & Speg. (?)

Spots amphigenous, olivaceous below, dirty white above, 1—3 millim. diam. or, by confluence, larger, with a purplish shaded border (on the green leaves); perithecia rather numerous, epiphyllous, lenticular, 100—120 μ in diameter, dull black; sporules 18—30 x $\frac{3}{4}$ —1 μ , faintly nucleolate, nearly straight, hyaline. These characters are taken from specimens on *Phlox divaricata* collected by E. W. Holway in Iowa and probably the same as found in Wisconsin by Trelease on the same host (Parasitic Fungi Wis., p. 19), but the sporules are shorter and narrower than stated by Sacc. Syll. III. p. 533, where the sporules are given as 40—60 x 1—3 μ and the perithecia 150—200 μ .

179. SEPTORIA EUPATORII, Rob. & Desm. On lower leaves of living *Eupatorium serotinum*. Louisiana, March, 1887. Langlois, No. 1097.

Spots numerous, small, round, yellowish at first but soon becoming white, border narrow, raised and generally surrounded with a purplish stain; sporules rather thicker at one end, nearly straight, yellowish-hyaline, nucleolate, 20—25 x $1\frac{1}{2}$ μ .

180. SEPTORIA COCOINA, E. & E. On leaves of *Cocos plumosa*, in a hot house, Columbia, Mo., May, 1887. B. T. Galloway, No. 250.

Spots amphigenous, large (1—2 cm.), white, with a black border; perithecia epiphyllous, scattered, lenticular, 150—200 μ in diameter; sporules clavate-vermicular, continuous, hyaline, mostly subundulate-curved, variable in length from 8—16 μ and $1\frac{1}{2}$ —2 μ thick.

181. SEPTORIA CHIMAPHILÆ, E. & E. On leaves of *Chimaphila maculata*. Faulkland, Del., June, 1887. A. Commons, No. 515.

Spots amphigenous, white, with a purple border; perithecia mostly epiphyllous, scattered, sublenticular; sporules acicular, about twenty μ long by less than one μ thick. Whether this is the *Depazea Pyrolæ*, Fr., mentioned by Peck in 23d Rep., p. 64, as found on *Chimaphila umbellata*, we cannot say.

182. *SEPTORIA EXPANSA*, Niessl. Hedw., 1883, p. 15. On *Geranium Carolinianum*. Manhattan, Kansas, June, 1887 (Kellerman.)

"Hypophyllous, spots indeterminate, much expanded, gilvous or subochraceous; perithecia scattered, rather large, semi-immersed, opening at the apex; cirrhi reddish; sporules filiform, slightly curved, $50-60 \times 1 \mu$, multinucleate and indistinctly septate." The Kansas specimens, which are evidently the same as those distributed by Dr. Winter in his *Exsiccati* (No. 2897), agree with the above description, except that the sporules are often $75-100 \mu$ long and mostly as much as $1\frac{1}{2} \mu$ wide. They generally have about three septa.

183. *SEPTORIA ARGOPHYLLA*, E. & K. n. s. On living leaves of *Psoralea argophylla*. Manhattan, Kans., June, 1887 (W. T. Swingle.)

Spots amphigenous, minute (one millim.), nearly black at first, becoming dirty white in the center, with a dark, subindefinite border; perithecia mostly epiphyllous, scattered, rather large, immersed; sporules cylindrical, curved, obtuse, hyaline, faintly 2-3-septate, $40-55 \times 2\frac{1}{2}-3 \mu$. Approaches *Phleospora*.

184. *SEPTORIA SILPHII*, E. & E. On leaves of *Silphium perfoliatum*. Ames, Iowa, September, 1886. Prof. B. D. Halsted.

Spots amphigenous, 2-5 millim. in diameter, dirty brown above, paler below, subrotund or limited by the veinlets of the leaf, border definite, slightly raised; perithecia sublenticular, mostly epiphyllous; sporules filiform, $35-50 \times 1 \mu$, nearly straight and only faintly nucleolate. The spots become dirty white in the center. Closely allied to *S. Cacaliæ*, E. & K., but spots rather darker and sporules mostly shorter.

185. *SEPTORIA LITTOREA*, Sacc. Syll. III, p. 512. On living and partly dead leaves of *Apocynum cannabinum*. Manhattan, Ks., June, 1887.

Spots amphigenous, rusty color, with a small, white center, definite, suborbicular, 1-3 millim.; perithecia few (1-3) on a spot, epiphyllous, sublenticular; sporules subcylindrical, curved, nucleolate, nearly hyaline, obtuse at each end, mostly $50-70 \times 2 \mu$, but some of them even $90-100 \mu$ long. This agrees so well with the description given by Saccardo that there can be little doubt of its being his species.

186. *SEPTORIA SII*, Rob. & Desm. Sacc. Syll. III, p. 530. On leaves of *Cicuta maculata*. Manhattan, Ks., July, 1884. (Kellerman.)

Spots amphigenous, small (one millim.), round or nearly so, yellowish at first, then white, with a pale yellow border; perithecia few (1-3) on a spot, epiphyllous, black, punctiform; sporules filiform, slightly curved, ends rather acute, yellowish-hyaline, nucleolate, $35-40 \times 1-1\frac{1}{2} \mu$.

187. *SEPTORIA AEGOPODII*, Desm. Crypt. Fr., 616. On withered leaves of *Osmorrhiza longistylis*. Racine, Wis., June, 1887. Dr. J. J. Davis.

Spots amphigenous, dirty white above, with an imperfectly-defined dark border, greenish below, small (2-3 millim.); perithecia nearly obsolete, pale, thickly scattered over the spots and visible on both sides, lenticular, $150-200 \mu$ in diameter; sporules cylindrical, granular and

nucleate, becoming 1-septate, $45-75 \times 2\frac{1}{2}-3 \mu$. This is really a *Phleospora*, on account of the very imperfect perithecia (if they can properly be called perithecia). Really "acervuli" would be more nearly correct, as there are no proper perithecia either in the Wisconsin specimens or in any of the specimens of *S. Aegopodii* in the various European Exsiccati examined.

188. SEPTORIA HELENII, E. & E. On leaves of *Helenium autumnale*. Racine, Wis., June, 1887. Dr. J. J. Davis.

Spots amphigenous, 2—4 millim. in diameter, dark, becoming dirty white, with a dark, slightly raised border; perithecia about 100μ in diameter, of pale, parenchymatous structure, epiphyllous, the minute, black, perforated, papilliform ostiola showing as black specks thickly scattered on the spots; sporules vermiform, $20-35 \times 2 \mu$, 1—3-septate. *S. Helianthi*, E. & K., has larger, ferruginous spots without any raised border and much longer sporules acuminate attenuated at each end and 3—5-septate.

In the 23d Rep. N. Y. State Mus., pp. 54 and 55, the following *Septorias* are mentioned: *S. plantaginicola*, B. & C.; *S. Liriodendri*, B. & C.; *S. Vitis*, B. & C.; *S. destruens*, West.; *S. sanguinea*, Desm. Of these, the first is probably the same as *S. inconspicua*, B. & C.; the others may be considered doubtful.

Septoria viticola, B. & C., in Rav. F. Am., No. 26, should be *Sacidium viticolum*. See Grev. VI, p. 136.

NOTE.—In the preceding list, Nos. 159—188 have been added since Dr. Martin's death.

Prof. Saccardo having transferred a number of species heretofore described as *Septorias* to the genera *Phleospora*, *Rhabdospora* and *Phlyctæna*, they will be found under these heads.

PHLEOSPORA, Wall. Sylloge III, p. 577.

Perithecia innate, imperfect; sporules hyaline, elongated-fusoid, thick, 2-pluriseptate—growing on leaves. A name illy chosen to distinguish them from the *Septorias*, as the sporules are exuded or flow out in both.

1. PHLEOSPORA ACERIS (Lib.) Sacc. Sylloge III, p. 577; *Ascochyta Aceris*, Lib.; *Septoria acericola*, Desm.; *Septoria Aceris*, B. & Br.; Ellis, N. A. F., 346.

Spots tawny or pale yellow, subangular, limited by the veinlets, often coalescing, 3—5 millim. in diameter; perithecia brown, flattened, innate, hypophyllous, $150-200 \mu$ in diameter; sporules hyaline, subfusiform, ends obtuse, 3-septate, not constricted, $20-30 \times 3-5 \mu$. On leaves of *Acer* and *Negundo aceroides*. Massachusetts and California.

2. PHLEOSPORA CELTIDIS, E. & M.

Spots gray-brown, gray in the center, irregular, coalescing; perithecia dark brown, subglobose, prominent, few in a spot, amphigenous, $200-275 \mu$ in diameter; sporules subhyaline, subfusiform, ends subacute, curved, 6—8-septate, $70-80 \times 8-10 \mu$. On leaves of *Celtis occidentalis*. Missouri.

3. PHLEOSPORA MORI (Lev.), Sacc. Sylloge III, p. 577; *Septoria Mori*, Lev.; Rav. F. A., 506.

Spots light brown, subcircular, 1—2 millim. in diameter, border red-brown; perithecia (?) brown, innate, slightly prominent, hypophyllous—"mostly epiphyllous, Sacc."—50—60 μ in diameter; sporules hyaline, subfusiform, nearly straight, 3—4-septate, 40—50 x 4 μ . On leaves of *Morus rubra*. Pennsylvania to South Carolina. Perithecia very variable and sometimes entirely wanting.

4. PHLEOSPORA MORICOLA (Pass.), Sacc. Sylloge III, p. 578; *Septoria Mori*, Lev.

Spots indeterminate or brownish-gray, with a narrow, red-brown border; perithecia (?) small, scattered or loosely gregarious, innate slightly prominent, hypophyllous; sporules hyaline, subfusiform, multi-septate, on Pennsylvania specimen 5—7-septate, 60—70 x 4—5 μ . On leaves of *Morus alba*. Pennsylvania. Only distinguished from *P. Mori* by the multiseptate sporules.

5. PHLEOSPORA ULMI (Fr.), Wallr. Sylloge III, p. 578; *Septoria Ulmi*, Fr.

Spots light brown; perithecia (?) thin, scattered, innate, hypophyllous, brown, 120—140 μ in diameter; sporules hyaline, oblong-ovate, ends obtuse, 3—4-septate, 40—50 x 6 μ , exuded in white threads. On leaves of *Ulmus*. New York, Pennsylvania and Kentucky and westward to Missouri and Kansas.

6. PHLEOSPORA ANEMONES, E. & K. On leaves of *Anemone*. Kansas, July, 1886. (Kellerman.)

Leaf slightly yellowish and sprinkled with reddish-purple specks, indicating the position of the perithecia, which are distinctly prominent below, with a large opening through which issue in pale cirrhi the oblong-cylindrical, hyaline, nucleate, finally 3-septate sporules, which are 25—40 μ long and about three μ thick.

7. PHLEOSPORA ASIMINÆ, Ell. & Morgan. On leaves of *Asimina triloba*. Preston, Ohio. A. P. Morgan.

Leaves blotched above with dark brown; perithecia very rudimentary, minute, crowded in the brown spots in areas limited by the veinlets, opening below and discharging the oblong-fusoid, granular, nucleate and finally about 3-septate, slightly constricted, 20—40 x 12—15 μ sporules in the form of a white pruinosity on the surface of the leaf; basidia stout, 10—20 x 6—10 μ . The habit and general appearance is that of a *Cylindrosporium*.

8. PHLEOSPORA CARICIS, E. & E. On partly dead leaves of *Carex angustata*. Faulkland, Del., October, 1886. A. Commons, No. 466.

Perithecia on dull white, orbicular or, by confluence, subelongated spots 1—2 millim. in diameter, 3—10 in a spot, minute, black, slightly prominent; sporules oblong, 40—60 x 12—16 μ , becoming 4—6-septate. The spots appear on the green, living leaf and are surrounded by reddish rusty border and the leaf soon becomes dead and dry.

RHABDOSPORA, Mont. Sylloge III, p. 578.

Perithecia innate-erumpent, globose or depressed, brown or black, growing mostly without spots on branches or stems and not on leaves.

1. RHABDOSPORA ALLANTOIDEA (B. & C.), Sacc. Sylloge III, p. 586; *Septoria allantoidea*, B. & C., N. A. Fungi, No. 442.

"Spots pallid, elongated; sporules slightly sausage-shaped (oblong), 15—12 μ long." On stems of *Medicago sativa*. Pennsylvania.

2. RHABDOSPORA BREVIUSCULA (B. & C.), Sacc. Sylloge III, p. 580; *Septoria breviuscula*, B. & C., N. A. Fungi, No. 450 bis.

"Epidermis elevated by the perithecia; sporules sausage-shaped, twenty-five μ long." On branches of *Robinia*. South Carolina.

3. RHABDOSPORA CONTINUA (B. & C.), Sacc. Sylloge III, p. 593; *Septoria continua*, B. & C., N. of N. A. Fungi, p. 11, No. 444.

"Perithecia scattered, hidden by the epidermis, a little prominent; sporules filiform, nearly straight, basidia half the length of the sporules." On the scapes of *Plantago major*. Pennsylvania.

4. RHABDOSPORA DECIPIENS (B. & C.), Sacc. Sylloge III, p. 582; "*Septoria decipiens*, B. & C., N. A. Fungi, No. 445.

"Perithecia at last uncovered; sporules slender, long, flexuous." On whitened twigs of *Lonicera*. South Carolina.

5. RHABDOSPORA DIANÆ (B. & C.), Sacc. Sylloge III, p. 586; *Septoria Dianæ*, B. & C., N. A. Fungi, No. 445 bis.

"Perithecia flattened, large; sporules curved, long, nucleolate, acute." On branches of unknown tree. New England."

6. RHABDOSPORA FALX (B. & C.), Sacc. Sylloge III, p. 582; *Septoria Falx*, B. et C. Notice, N. A. Fungi, p. 76, No. 446 bis.

"Spots dull white or none; perithecia brown, black around the ostiola, globose, large, erumpent, densely gregarious, numerous; sporules hyaline, filiform, continuous, not guttulate, 18—20 x 2—2½ μ ; basidia hyaline, straight, 12—16 x 2—2½ μ ." On branches of *Vitis*. South Carolina.

7. RHABDOSPORA HEDEOMINA (Pk.), Sacc. Sylloge III, p. 590; *Septoria hedeomina*, Peck, 33d Rep. N. Y. S. M., p. 25.

"Spots none; perithecia black, flattened, scattered, inconspicuous, 120—140 μ in diameter; sporules hyaline, filiform, strongly curved, 30—40 μ long." On dead calyx stems of *Hedeoma pulegioides*. New York.

8. RHABDOSPORA HELIANTHICOLA (C. & H.), Sacc. Sylloge III, p. 592; *Septoria helianthicola*, C. & Hark., Grev. IX, p. 6.

"Perithecia black, semi-immersed, forming black spots; sporules linear, straight or flexuous, colorless, 30—35 x 1 μ ." On stems of *Helianthus*. California.

9. RHABDOSPORA INTERRUPTA (B. et C.), Sacc. Sylloge III, p. 583; *Septoria interrupta*, B. et C., N. A. Fungi, No. 446.

"Perithecia scattered; sporules linear, flexuous, multinucleate, fifty μ long." On branches of *Viburnum Opulus*. Pennsylvania.

10. RHABDOSPORA JUGLANDIS (Schw.), Sacc. Sylloge III, p. 584; *Septoria Juglandis*, B. et C., N. A. Fungi, p. 76.

"Perithecia black, innate, barely erumpent, gregarious; sporules rod-shaped, shortly curved above." On branches of *Juglans nigra*. Pennsylvania.

11. RHABDOSPORA KELLERMANI, E. & M.

Spots obsolete; perithecia black, innate, lenticular, scattered, 126—150 μ in diameter; sporules filiform, hyaline, nearly straight, 45 x 1½ μ . On stems and leaves of *Scrophularia nodosa* and *Mimulus ringens*. Ohio.

12. RHABDOSPORA LONICERÆ (C. et Ell.), Sacc. Sylloge III, p. 582; *Cryptosporium Lonicera*, C. & E., Grev. VI, p. 83.

"Perithecia black, subgregarious, covered by the elongated, fissured epidermis; sporules hyaline, cylindrical, curved, obtuse, twenty-five μ long." On branches of *Lonicera*. New Jersey.

13. RHABDOSPORA MACULANS (B. et C.), Sacc. Sylloge III, p. 584; *Septoria maculans*, B. et C., N. A. Fungi, No. 448 bis.

"Spots pallid, minute, definite, border obscure; perithecia punctiform, gregarious; sporules slender, flexuous, twenty-five μ long." On slender twigs of *Alnus*. South Carolina.

14. RHABDOSPORA PINI (B. et C.), Sacc. Sylloge III, p. 585; *Cryptosporium Pini*, B. et C., N. A. Fungi, No. 396.

"Perithecia papilliform, black, covered by the cuticle, then erumpent; sporules slender, curved, 1-septate, ends attenuated, seventy μ long; basidia one third as long as the sporules." On smooth bark of *Pinus*. New England.

15. RHABDOSPORA RIBICOLA (B. et C.), Sacc. Sylloge III, p. 579; *Septoria ribicola*, B. et C., N. A. Fungi, No. 444 bis.

"Perithecia black, scattered; sporules linear, curved, twenty-five μ long." On bleached branches of *Ribes rotundifolia*. Wisconsin.

16. RHABDOSPORA RUBI, Ell. n. sp.

Perithecia black, subglobose, innate, erumpent, scattered, 100—195 μ in diameter; sporules hyaline, linear, curved, 3—4-septate, 40—45 x 2 μ . On stems of *Rubus strigosus*. Illinois.

17. RHABDOSPORA SOLIDAGINIS (C. et E.), Sacc. Sylloge III, p. 591; *Cryptosporium Solidaginis*, C. et E., Grev. VI, p. 83.

"Perithecia brown, flattened, small, gregarious, innate, erumpent; sporules hyaline, fusiform, bowed or gently curved, acute, 30—35 μ long." On stems of *Solidago*. New Jersey.

18. RHABDOSPORA TRIFOLII (Ellis), Sacc. Sylloge III, p. 586; *Septoria Trifolii*, Ellis, Bul. Torr. Bot. Club IX, p. 74; Ellis, N. A. F., 746.

Perithecia covered but soon exposed by the peeling off of the epidermis, gregarious, forming little elongated patches or scattered evenly over the matrix; sporules fusiform, curved, granular, 20 x 4—5 μ . On dead stems of *Trifolium pratense*.

19. RHABDOSPORA VERRUCIFORMIS (B. et C.), Sacc. Sylloge III, p. 583; *Septoria verruciformis*, B. et C., N. A. F., No. 447.

"Perithecia large, wrinkled; sporules slender, nearly straight." On branches of *Cephalanthus*. Alabama.

20. RHABDOSPORA SUBGRISEA, Pk. 38th Rep. N. Y. State Mus., p. 98.

"Perithecia numerous, punctiform, depressed, black, covered by the epidermis, generally forming long, indefinite, grayish-brown spots; sporules filiform, straight or curved, 8—15 μ long. Dead stems and galls of various species of *Solidago*. Albany, N. Y., April and May."

PHLYCTÆNA, Mont. & Desm.

Perithecia subcutaneous, sometimes erumpent, globose-oblong, opening in a subhysterioid manner, imperfect; sporules fusoid-elongate or filiform, continuous, hyaline, borne on various basidia.

1. PHLYCTÆNA VAGABUNDA, Desm. Sacc. Syll. III, p. 594.

"Spots none or very minute, brown, fibrillose; pseudo-perithecia numerous, scattered; sporules hyaline, curved, elongated, linear, subobtuse, 7—9-guttulate, 18—25 μ long. On herbaceous stems of *Phytolacca*, etc."

2. PHLYCTÆNA SEPTORIOIDES, Sacc. *Septoria phlyctæncides*, B. & C., Grev. III, p. 10.

"Caulicolous; on white, elongated spots; perithecia hysteriiform; sporules filiform, curved above, hyaline, about twenty-five μ long. On stems of *Phytolacca*. Pennsylvania (Michener.)"

3. PHLYCTÆNA ORTHOSPORA, B. & C. Grev. II, p. 101.

"Pustules oblong with a dark margin, covered by the epidermis; sporules oblong, six μ long. On stems of *Phytolacca*." More properly a *Phoma*.

4. PHLYCTÆNA COMPLANATA (B. & C.) *Septoria complanata*, B. & C., Grev. III, p. 10.

"Caulicolous; perithecia rather large, somewhat flattened, hysteriiform; sporules very slender, nearly straight, very long. On stems of *Polygonum Virginicum*. Pennsylvania (Michener.)"

5. PHLYCTÆNA GOSSYPHII, Sacc. Syll. III, p. 595.

"Perithecia globose, depressed, one half millim. in diameter, partially covered, texture parenchymatic, subfuscous; nucleus gray; sporules filiform, uncinatate above, 25—30 x 1—1½ μ , hyaline, borne on rather short, bacillary basidia. On stems of cotton plant. South Carolina (Ravenel.)"

6. PHLYCTÆNA ARCUATA, Berk. Grev. II, p. 100.

"Pustules minute, subconvex, covered by the epidermis; sporules filiform, hooked at the apex, twenty-five μ long. On dead stem of *Solidago* and on *Rumex*."

7. PHLYCTÆNA SIMULANS (B. & C.) *Septoria simulans*, B. & C., Grev. III, p. 10.

"Caulicolous; on an elongated, pale spot; perithecia hysteriiform; sporules linear, curved, 25 μ long, elongated, curved at the apex, 20—25 μ long. On stems of *Nabalus*. New England."

8. PHLYCTÆNA SMILACIS, Cke. Texas Fungi, No. 141.

"Covered, minute, brown, densely gregarious, slightly elevated; sporules filiform, elongated, curved at the apex, 20—25 μ long." On stems of *Smilax*. Texas.

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OBITUARY.

Dr. Ezra Michener died at his residence in Toughkenamon, Chester Co., Pa., June 25, 1887, in the 93d year of his age. He was born in London Grove township, in Chester Co., Nov. 24, 1794. In 1818 he received his medical diploma and began the practice of medicine in his native village. Some ten years later, he removed to Toughkenamon, where he ever afterwards continued to reside. For sixty years, he was the trusted family physician of many of the residents of his section; but among scientific men, he will be chiefly remembered on account of his mycological work in collecting and giving to science, through the publications of Berkeley & Curtis, many new and rare fungi from his locality. E.

NEW LITERATURE.

BY W. A. KELLERMAN.

"REVISIO MONOGRAPHICA GENERIS GEASTERIS MICH., E TRIBU GASTEROMYCETUM." Auctore Doct. G. B. DeToni (Suite et fin.) Revue Mycologique, 1er Juillet, 1887.

"THE GROWTH OF TULOSTOMA MAMMOSUM." Chas. E. Bessey. American Naturalist, July, 1887.

"FUNGI SELECTI EXSICCATI PRÆCIPUE GALLIÆ ET ALGERIÆ." Centurie XLIIe. C. Roumeguere.

"LES HYMENOMYCETES D'EUROPE: ANATOMIE GÉNÉRALE ET CLASSIFICATION DES CHAMPIGNONS SUPÉRIEURS." N. Patouillard. Paris. Librairie Paul Klincksieck, 1887.

This valuable work, which is Vol. I of *Materiaux pour l'Histoire des Champignons*, embraces general anatomy, pp. 1-69, classification, pp. 70-166, and four plates, with numerous figures, illustrating the anatomy of the several species.

"SYLLOGE FUNGORUM OMNIUM HUCUSQUE COGNITORUM," digessit P. A. Saccardo, Padua, May 28, 1887.

The 5th volume of this work is now issued. It is a thick royal octavo volume of 1,144 pages and is devoted to the *Agaricini*, of which 4,639 species are enumerated with the original descriptions. The systematic arrangement is the same as that given by Fries in his *Epicrisis*, except that the subgenera *Amanita*, *Tricholoma*, *Lepiota*, etc., are given generic rank.

The rest of the *Hymenomycetes* will be included in Vol. VI (which will be about half the size of Vol. V) and is expected to be ready early in 1888 and will contain an index of all the species of *Hymenomycetes*, Vol. V having only an index of the genera.

Vol. VII, on which the work is already nearly finished, is expected to appear at the end of the current year and will contain the *Phalloids*, *Nidulariaceæ*, *Lycoperdons*, *Hymenogasters*, *Mucorini*, *Peronosporæ*, *Saprolegnæ*, *Entomophthoræ*, *Chytridiaceæ*, *Protomycetæ* and *Myxomycetes*.

The VIII and last volume, containing the *Discomycetes*, *Tuberaceæ*, *Elaphomycetæ*, *Saccharomycetæ*, *Estilagineæ* and *Uredineæ* is promised early in 1889. E.

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SYNOPSIS OF THE NORTH AMERICAN SPECIES OF XYLARIA AND PORONIA.

BY J. B. ELLIS AND B. M. EVERHART.

XYLARIA, Hill. Hist. Plant (1773), pp. 62 and 63.

Stroma erect, round, clavate or subglobose, mostly stipitate, suberose or coriaceous; perithecia adnate or immersed in the stroma, coriaceo-carbonaceous; asci subcylindrical; sporidia ovoid or subnavicular, continuous, dark.

A. XYLOGLOSSA. Capitulum everywhere fertile, stem smooth.

a. *Capitulum clavate, stem slender, elongated.*

1. XYLARIA EUGLOSSA, Fr. Nov. Symb., p. 124.

Stroma clavate, thickened above, obtuse, smooth, clay colored, black-punctate by the minute ostiola, within whitish-cinereous, becoming darker towards the surface; perithecia entirely immersed, globose, black, stipe slender, elongated, glabrous, turning black. Found in Costa Rica by Oersted.

This species resembles *Geoglossum difforme*, but is larger, 3—4 inches high and, in the dry state, at least, is longitudinally rugose, often arcuate-incurved or twisted and almost as hard as stone; stipe over an inch long, but scarcely exceeding a line in thickness, equal, glabrous, longitudinally rugose when dry. The club in form and color resembles *Clavaria ligula*, but is paler, properly black, but appearing as if smeared over with alutaceous-clay color, obtuse above and distinct from the stipe; asci slender, linear, evanescent; sporidia uniseriate, oblong, acute at each end, continuous, opaque, occasionally curved.

2. XYLARIA PROTEA, Fr. l. c., p. 125.

Stroma suberose-indurated, lanceolate, obtuse, wrinkled, bare, white within, stipe slender, equal, glabrous; perithecia globose, subimmersed, peripheric, depressed-hemispheric, with rather prominent ostiola. On trunks in Costa Rica. Oersted.

Resembles *X. corniformis*, Fr., which, however, differs in its obsolete stipe and villous base, while this, like the preceding species, has the stipe slender, very smooth and varnished and so fragile that there is hardly a

whole one in the collection, about a line thick and, in the dry state, longitudinally cavernose-rugose; club about $1\frac{1}{2}$ inches long and one fourth of an inch thick, obtuse, bare, opaque, black and at the first glance appearing rimose-corrugated, but in reality the surface is densely colliculose by reason of the slightly prominent perithecia, with depressed papilliform ostiola. The perithecia are rather large, exactly globose, peripheric, not very regularly arranged and have a dark-colored nucleus. The asci and sporidia are almost the same as in the preceding species.

3. *XYLARIA RHOPALOIDES* (Kunze) Mont. Ann. Sci. Nat., 1885, III, p. 99, and 1840, XIII, Cent. II, No. 27.

We find under these references no detailed description of this species, but in Cooke's figure in Grev., pl. 163, fig. 14, it is represented as subcæspitose, the short stem-like base dividing above into two clavate-cylindrical, fertile branches. Saccardo, in Syll. I, p. 326, says the asci are briefly stipitate, cylindrical, 8-spored, sporidia 8—10 μ long (10 x 5 μ , sec. Cooke, in Grev. XI, p. 82.)

4. *XYLARIA MULTIFIDA* (Kunze) sec. Lev. Ann. Sci. Nat., 1845, III, p. 45. The following description of this species is copied from Grev. XI, p. 85:

"Stromate conidiifero erecto, furcato-partito, palmatoque, albido; stromate ascigero simplici, atro, erecto, clavato; stipite æquilango, tenui, atro, glabro (?); peritheciis globosis, atris, prominulis; ascis cylindraceis, stipitatis; sporidiis fusiformibus, obtusis, inæquilateralibus, fuscis, (.01—.012 x .004—.005.) On trunks. Java and Central America. In Herb. Paris. Greatly resembles *X. Hypoxylon*, of which it may be a variety."

5. *XYLARIA TENTACULATA*, Rav. MS. Journ. Linn. Soc. X, p. 381; *X. tentaculata*, B. & Br., Grev. IV, p. 48.

Stipe weak, elongated, slender, glabrous; head short-cylindrical, roughened by the ascending ostiola; apex adorned with flagelliform processes. On decaying wood. June. South Carolina, $1\frac{1}{2}$ inches high. No. 603 is a variety in which the processes have short, patent branchlets resembling somewhat *X. comosa*, but without its velvety skin. (Linn. Journ., l. c.) The characters given in Grevillea are as follows: "Stipe elongato glabro fusco; capitulo brevi cylindrico, processibus tentaculiformibus coronato. In shaded swamps, among mosses and rotten wood. Car. Inf., Ravenel, No. 1,300. Stem one inch high, not a line thick; head cylindrical, 1—2 lines long, ostiola prominent, tending upwards, crowned by several tentacular processes about one half an inch long. Allied to *Xylaria comosa*, Mont."

6. *XYLARIA OLOBAPHA*, Berk., in Herb. Kew., Grev. XI, p. 84.

"Stroma erect, clavate, rufous, attenuated below into a short, slender, glabrous, equal stipe; perithecia globose, black, ostiola punctiform, flat; asci cylindrical, stipitate; sporidia lanceolate, curved or straight, fuscous, 20—22 x $8\frac{1}{2}$ μ . On trunks, Brazil, Mexico. Whole plant 2—2 $\frac{1}{2}$ inches high, of which the club occupies half; club 1 cm. thick."

b. *Capitulum subclavate; stem thick, abbreviated or obsolete.*

7. XYLARIA POLYMORPHA (Pers.) Grev. Flor. Edin., p. 35; Nitschke Pyr. Germ., p. 17; *Sphæria polymorpha*, Pers., Comm., p. 17.

Stromata fasciculate or tufted, 2—6 connate at base, or more rarely solitary, erect, thick, glabrous, dark argillaceous, becoming black, sometimes simple and terete, more or less attenuated at the base and apex, or quite obtuse and subcylindrical, or compressed and obovate, or emarginate, or furcately branched, or sometimes nearly globose, the entire surface—except the very short or nearly obsolete stipe—roughened by the slightly prominent, rather large ($\frac{1}{2}$ — $\frac{3}{4}$ millim.), ovate, closely-packed perithecia; asci cylindrical, with a very long, stipitate, slender base, 140—180 x 8—10 μ (spore-bearing part 100—120 μ long); sporidia uniseriate, subfusoid or navicular, often more or less curved, subacute at each end or rarely obtuse, pale at first, with 1—2 nuclei, soon opaque, 20—30 x 5—9 μ . Around the base of old stumps, etc. Common throughout the United States and Canada.

8. XYLARIA TITAN, B. & C. Grev. IV, p. 47.

“Gigantea allantoidea dura, extus albida; ostiolis nigris prominentibus. Texas, Lindheimer, No. 2,676. Five inches long, two inches wide, sausage shaped, convex on one side, hollow on the other, hard, solid, dirty-white, stained with the sporidia and dotted with the prominent ostiola.”

9. XYLARIA FULVELLA, B. & C. Linn. Journ., X, p. 380.

“Clavata, rubiginosa, papillata; peritheciis semiprominulis, ostiolis nigris; stipite cylindrico, pallide fulvo lineato-rugoso (590). On dead wood. Alabama (No. 4,902). Sporidia oblong, .0003 inch long, closely allied to an Australian species, *X. phosphoria*, B., but differs in the absence of the white ring around the ostiolum.” Found also in Cuba.

c. *Capitulum subglobose.*

10. XYLARIA CUDONIA, B. & C. Grev. IV, p. 47.

On rotten trunks, Santee Canal, So. Ca. (Ravenel.) Appearing somewhat as if varnished; stipe short (twelve millim. high, four millim. thick) dilated above; head hemispheric, twelve millim. in diameter, papillate, roughened by the slightly prominent perithecia; ostiola very small. Cooke, in Grev. XI, p. 82, states that the sporidia are almond-shaped, 13 x 8 μ .

11. XYLARIA CLAVULUS, B. & C. On decaying culm of some grass in Texas.

“Parva seriata; stipite brevi, crassiusculo penetrante; capitulo convexo.” Saccardo, in Syll. I, p. 323, says: “Stroma about 2—3 millim. high, not varnished (laccate) texture rather firm; a beautiful but minute species.

B. XYLOCORYNE. Club everywhere fertile; stem villose.

a. *Capitulum clavate; stem elongated, slender.*

12. *XYLARIA FASTIGIATA*, Fr. Nov. Symb., p. 127 (Linn. Trans., 1830, p. 536).

Densely cæspitose-connate, fistulose, black; clubs short, oblong or cylindric, obtuse, papillose-scabrous; perithecia immersed, peripheric, globose, ostiola papilliform. On trunks in Costa Rica. (Oersted.) Stipes densely packed, joined at base and often ramose-concrescent, compressed, angular, often torulose and flexuous, an inch or more long and about a line thick, not truly villose, but covered at first with a dark, oppressed, subleprosous coat; club not distinct from the stipe, comparatively small, slightly swollen, scarcely over two lines thick, unequal, bare, fastigate, black; perithecia in a thin, black, peripheric layer, small, globose, slightly prominent, decurrent on the stipe; sporidia oblong, curved, opaque.

13. *XYLARIA MULTIPLEX* (Kze.) Fr. On trunks in Mexico. (Høegberg.)

Cæspitose, suberose, brown-black, clubs terete-compressed, subdivided, smooth, white inside; stipes elongated, leprose-villose; perithecia entirely immersed, globose, crowded; ostiola punctiform, becoming somewhat dilated; sporidia ovoid, 20—22 μ long.

14. *XYLARIA GEOGLOSSUM* (Schw.) Jour. Acad. Nat. Sci., Phil., Vol. V, tab. 1, fig. 4. Sent by Dr. Torrey from New York. Habitat not noted.

Carnose suberose, simple, very black; club tongue-shaped, compressed, somewhat grooved, falcate, obtuse at the apex; perithecia oblong, black, somewhat prominent; ostiola minute, scarcely prominent; stipe three times longer than the club, subsquamulose, hairy at the base, slender, suberose, black outside, white within. Resembles a *Geoglossum*. Whole plant about one inch high ("pollicem altus.")

15. *XYLARIA CORNIFORMIS*, Fr. Summ. Veg. Scand., p. 381.

Stroma simple, club-shaped, 1—1½ inches high and about one fourth of an inch thick, obtuse at the apex, light brown at first, finally black; stem short (one fourth of an inch) hairy, attached to the matrix by an enlarged subdiscoid base; perithecia subglobose, only slightly prominent, small; ostiola papilliform, minute; asci cylindrical, on long pedicels, 8-spored, spore-bearing part 60—75 x 6—7 μ ; sporidia obliquely uniseriate, somewhat inequilateral or nearly straight, rounded at each end and obtuse, opaque, 8—10 x 5 μ . Common from New York to Florida on decaying limbs and logs. At Newfield, N. J., it is confined almost exclusively to fallen trunks of *Magnolia glauca*. It does not seem to be as abundant and common in the western and Pacific states. *Sphaeria flabelliformis*, Schw., is an abortive state of this species, in which the short stem, instead of being surmounted by a fertile club, is divided above in a fimbriate or brush-like manner into many short, acute branches, the whole rising only to the height of about one fourth of an inch, forming a small, light, reddish or flesh-colored tuft filled with abundant, minute conidia.

C. *XYLOSTYLA*. Apex of the club sterile, stem smooth.

a. Head clavate, simple or crested.

16. *XYLARIA GRAMINICOLA*, Ger. 26th Rep. N. Y. State Mus., p. 85.

"Club slender, cylindrical, simple, at first greenish-pulverulent, then blackish brown, roughened by the prominent, globose perithecia, tips sterile, acuminate; stem smooth, straight or flexuous, brown; spores uniseriate, unequally elliptical, .0004 x .0002 inches. Plant about two inches high, parasitic on the roots of languishing grasses. Allied to *X. Hypoxylon*. Poughkeepsie, N. Y. Gerard.

17. *XYLARIA MUCRONATA* (Schw.) On trunks of *Liriodendron*. Carolina (Schweinitz.) *Sphaeria mucronata*, Schw. Syn. Car., Journ. Acad. Nat. Sci., V, tab. 1, fig. 1.

Carnose, simple, stem liver-color (badius) subsquamulose, inflexed, compressed, one inch high, four lines thick; club thickened, irregular, becoming light yellow, apex mucronate; perithecia rather large and prominent, with globose, black ostiola; sporidia subglobose and black.

b. *Capituli connate or branched*.

18. *XYLARIA DIGITATA* (Linn.) Grev. Flor. Ed., 356; Nitschke Pyr., Germ., p. 9; Fr. S. M., II, p. 326. On decaying wood. New York (Peck), Carolina and Pennsylvania (Schweinitz), Texas (Lindheimer).

Stroma erect, thick, dark brown, leproso-velutinous, becoming smooth, round and simple, gradually attenuated at the apex, more rarely obtuse, or emarginate, or divided into 2—3 dichotomously cleft branches, sometimes clavate-columnar, 3—4 cm. high, flattened and dilated above, with the apex subdentate lobed. (The specimens in Rav. Car., V, No. 50, are of this sort.) Asci cylindrical, with a long, slender stipe, 8-spored; sporidia obliquely uniseriate, fusoid, obtuse, inequilateral, dark brown, 18—20 x 5—6 μ . All the American specimens we have seen have the sporidia smaller, 10—12 x 4—5 μ . Prof. Peck, in 30th Rep., p. 76, and 31st Rep., p. 79, has noted this peculiarity and distinguished our short-spored form as var. *Americana*. No form of this species has as yet been noticed around Newfield.

19. *XYLARIA GRANDIS*, Pk. 26th Rep. N. Y. State Mus., p. 85. On the ground. Portage, N. Y. (Clinton).

"Large, blackish-brown, irregular, obtusely pointed and rusty brown at the sterile tip, abruptly narrowed at the base; central substance white; perithecia subglobose; spores subfusiform, pointed at each end, straight or slightly curved, .0008—.0009 inches long; stem branched, radiating, often greatly elongated; plant 3—5 in. high, heads 1½—3 in. long, ¾—1 in. thick. The branching stem and pointed, sterile apices of the clubs separate this from *X. polymorpha*, which it also surpasses in size. The larger spores distinguish it from *X. digitata*."

c. *Stroma filiform*.

20. *XYLARIA FILIFORMIS* (A. & S.) On decaying leaves. Carolina (Ravenel), New Jersey (Ellis).

Stroma filiform, 3—5 cm. long and mostly less than one millim. thick at the base, gradually attenuated above, subundulate, white pruinose at first, with the apex inclining to flesh color, but finally smooth, black and

shining; perithecia conic-hemispheric, 200—250 μ in diameter, not crowded, seated on the stroma about midway or a little above the middle and extending along for about one cm.; ostiolum short, conic, acute; asci 75—80 x 7—8 μ (exceptionally 100 μ long), spore-bearing part 65—75 μ long; sporidia mostly biserial, pale olive brown, fusoid, often a little bulging on one side, 14—18 x 8—3½ μ ; paraphyses none. At Newfield, this occurs mostly on fallen leaves of *Magnolia glauca*. The specimens in Rav. Car. and in N. A. F. are sterile. but fertile specimens have now been found and will be again distributed.

D. XYLODACTYLA. Apex sterile, stem villose.

a. *Capitulum clavate, simple.*

21. XYLARIA TRACHELINA, Lev. (Sphæria, Cordyceps trachelina, Lev., Ann. Sci. Nat., 1860, V 304).

Clubs elongated, rugose, tuberculose, apices acute, sterile, sooty-black, white within, stipes very long, tomentose; perithecia globose, prominent, black within; ostiola obsolete; asci cylindrical; sporidia obtusely lanceolate, dark, 20 x 7 μ ; stipe one half an inch high; club one inch long, one eighth to one third of an inch thick. On trunks. New Granada, South America. We have included this species, as it is not improbable that it will be found in the contiguous territory of Central America.

22. XYLARIA PERSICARIA, Schw. Syn. Car., No. 9. On buried peach pits. Carolina (Schweinitz).

Cæsipitose, stem flexuous, rarely branching, rooting, three inches long and over, as thick as a crow's quill, at first covered with a greenish, villose coat, at length black; perithecia about midway, very prominent; club white, changing to a flesh-colored or yellowish tint. Where the peach stones from which it grows lie deep in the ground, the stem is sometimes six inches long.

(To be continued.)

NEW KANSAS FUNGI.

BY J. B. ELLIS AND W. A. KELLERMAN.

PHYLLOSTICTA IPOMÆÆ, E. & K.—On leaves of *Ipomœa pandurata*. Mound City, Kansas, July, 1887. W. A. Kellerman. Spots amphigenous, rusty brown, suborbicular, 2—4 millim.; with a dark, narrow border; perithecia scattered, immersed, slightly projecting above; sporules elliptical, 2-nucleate, hyaline, 4—6 x 2½—3 μ .

PHYLLOSTICTA SPINOSA, E. & K.—On leaves of *Sida spinosa*. Manhattan, Kansas, June, 1887. W. T. Swingle. Spots amphigenous, round, small (1—3 millim.), white above, rusty white below, border mostly purplish-shaded; perithecia mostly in the center of the spots, punctiform, black, slightly prominent; sporules oblong, 2-nucleate, 12—14 x 4—5 μ . The spots on the lower side of the leaf are covered with tufts of brown,

sterile hyphæ, about $40 \times 3 \mu$ and mostly curved. *Phyllosticta destructiva*, Desm., is said to grow on various plants and among them are *Malva* and *Althæa*, but the specimen of *P. destructiva* in Thumen's Mycotheca, 1,299, on *Althæa rosea* has sporules only about $5 \times 2 \mu$, and of the five numbers in Fungi Gallici labeled *P. destructiva*, only one affords any spores, viz.: 2,038, on *Malva silvestris*, having sporules $10-11 \times 3\frac{1}{2}-4 \mu$ and pseudo-septate, agreeing tolerably with Saccardo's *Ascochyta althæina* (Syll. III, p. 399). The specimen of *P. destructiva* in Rabh-Winter's Fungi Eur., 3,092, is different from all the others and certainly very different from the Kansas specimens which must also be different from *P. sidæcola*, Ck., said to have sporules $4 \times 2 \mu$.

SCOLECOTRICHUM MACULICOLA, E. & K.—On living and partly dead leaves of *Phragmites communis*. Kansas. June, 1887. W. A. Kellerman. Spots amphigenous, narrow elliptical, about $5-8 \times 2$ millim., dirty white, with a dark border; hyphæ hypophyllous, subundulate, continuous or with a single faint septum near the base, subfuliginous, about $40 \times 4-5 \mu$, growing in dense, spreading, olivaceous, seriate tufts, forming a single continuous line along the middle of each spot; conidia terminal, granular, continuous (so far as yet seen), ovate, ovate-elliptical or oblong, subhyaline, $20-22 \times 8-11 \mu$. *S. tomentosum*, Bon., is said to have septate hyphæ and nothing is said of any spots. *Hadotrichum lineare*, Pk., also resembles this, but has no spots and the hyphæ are darker, longer ($45-55 \mu$) and straight, and the conidia mostly shorter and more distinctly ovate.

RAMULARIA OCCIDENTALIS, E. & K.—On leaves of *Rumex Britannica*. Manhattan, Kas., July, 1887. W. T. Swingle. Amphigenous, spreading over the greater part of the leaf, but here and there forming denser patches of the minute, white, punctate tufts; hyphæ cæspitose, bacillary or slightly undulate above, entire or nearly so, $20-35 \times 2\frac{1}{2}-3 \mu$, hyaline and continuous, bearing at their tips the more or less distinctly catenulate, hyaline conidia, which vary in size and shape from ovate or ovate-elliptical, $5-6 \times 2-3 \mu$ to narrow-cylindrical, $25-35 \times 1\frac{1}{2}-2 \mu$, granular or nucleolate. This appears to differ from all the other species on *Rumex* in the entire absence of spots and in the shape and size of its conidia.

CERCOSPORA ASIMINÆ, E. & K.—On living leaves of *Asimina triloba*. Mound City, Ks., July, 1887. W. A. Kellerman. Spots scattered, small ($1-2$ millim. mostly), sterile, rather indefinite and purplish-brown above, grayish or mouse-colored below; fertile hyphæ scarcely tufted, short, brown, $12-15 \times 6-7 \mu$, rounded above or sometimes divided into several branches; conidia subolivaceous, broad, lanceolate, $5-7$ -septate, $60-80 \times 6-7 \mu$. A very curious and distinct species.

CERCOSPORA FULIGNIOSA, E. & K.—On living leaves of *Diospyros Virginiana*. Mound City, Ks., July, 1887. W. A. Kellerman. Spots amphigenous, small ($1-2$ millim.), purple-black; hyphæ hypophyllous, closely fasciculate-cæspitose, dark olivaceous, $100-150 \times 3 \mu$, obscurely septate, undulated and abruptly bent and much toothed above; conidia obclavate, 3 -septate, olivaceous, $35-40 \times 4 \mu$, slightly curved. Differs from *C. Diospyri*, Thum., in its definite spots and different hyphæ and conidia.

CERCOSPORA POLYTÆNIÆ, E. & K.—On leaves of *Polytænia Nuttallii*. Manhattan, Ks., June, 1887. W. T. Swingle. Hyphæ very short, olivaceous, forming dense, sphaeriæform tufts on dark (3—4 millim.), suborbicular or subelliptical spots, with a dirty-white center; conidia hyaline, granular, becoming 3—4-septate, 70—100 x 4—5 μ .

CERCOSPORA PRENANTHIS, E. & K.—On living leaves of *Prenanthes aspera*. Manhattan, Ks., August, 1887. W. T. Swingle. Amphigenous; tufts punctiform, minute, black, scattered quite evenly over the greater part of the leaf or more densely grouped in areas formed by the veinlets of the leaf; spots none; hyphæ short 25—35 x 4 μ , continuous, subolivaceous, simple, entire; conidia obclavate-cylindrical, nucleate and granular, nearly hyaline, 50—60 x 5—6 μ .

CERCOSPORA PACHYPUS, E. & K.—On *Helianthus lenticularis*. Manhattan, Ks., Aug., 1887. Swingle. Amphigenous, overspreading the greater part of both surfaces of the leaf, which is soon mottled with indefinite, yellowish spots above. On these spots, which finally become dirty brown, the fungus makes a denser growth, but it is not confined to the spots; hyphæ short, 20—30 x 6—8 μ or, when young, swollen at base (8—10 μ thick), torulose and dentate above, olive brown, continuous; conidia oblong or subcylindrical, obtuse at both ends, 1-septate, olivaceous, 25—70 x 5—7 μ , the longer ones narrower above. The tufts of hyphæ are small (about 35 μ across), with mostly 12—15 in a tuft. This is very different from *C. Helianthi*, E. & E., Journ. Mycol., III, p. 20, as will be seen by referring to the description of that species. The single septum in the conidia of the present species seems to be characteristic and not due to immaturity.

PERONOSPORA SWINGLEI, E. & K.—On leaves of *Salvia lanceolata*. Manhattan, Ks., June, 1887. W. T. Swingle. Forming cinereous patches of greater or less extent on the lower surface of the leaves, which are marked with rusty spots and blotches above; fertile hyphæ dichotomously branched above, the ultimate divisions short and spine-like; conidia elliptical, dull violet, 20—22 x 16—18 μ .

GLÆOSPORIUM MEDICAGINIS, E. & K.—On leaves, petioles and stipules of *Alfalfa*, *Medicago sativa*. (cult.) Manhattan, Ks., May, 1887. The affected leaves, which are principally the lower ones, turn yellowish and become dead and dry; acervuli scattered on these withered leaves, innate, blackish, rather large, visible on both sides but more prominent and opening below; spores oblong, cylindrical, granular, subhyaline, mostly distinctly narrowed in the middle, 15—20 x 3—4 μ . *G. trifolii*, Pk., is said to be on concentrically zoned spots and to have the spores 15—23 x 4—6.3 μ .

CYLINDROSPORIUM ERYNGII, E. & K.—On living leaves of *Eryngium yuccæfolium*. Mound City, Ks., July, 1887. W. A. Kellerman. Acervuli minute, innate, seriate, ejecting the cylindrical, slightly curved, multinucleate, becoming multiseptate, 70—80 x 3—4 μ , conidia on both sides of the leaf, forming conspicuous, white striæ, $\frac{1}{2}$ —1 cm. long; fertile hyphæ short and rudimentary. The leaf is slightly blackened, forming narrow (one millim.), brown, spots $\frac{1}{4}$ —1 cm. long. This resembles closely *Cylindrosporium veratrinum*, Sacc. & Winter.

CYLINDROSPORIUM MINOR, E. & K.—On living leaves of *Fraxinus viridis*. Manhattan, Ks. Kellerman, 839. Spots subangular, 3—4 millim. in diameter, red-brown, with the central part lighter; ascervuli innate, rather large, raising the epidermis on both sides of the leaf in a pustuliform manner, but mostly opening above and finally black, so as to resemble perithecia, but there is really no distinct perithecium; conidia narrow-cylindrical, curved, nucleate, hyaline. $35-40 \times 2 \mu$, much resembling those of *C. Fraxini*, E. & K., only much smaller. This is different from *Septoria Orni*, Pass. (Thum., M. U., 395), which also approaches *Cylindrosporium*.

PHLEOSPORA ANEMONES, E. & K.—On living leaves of *Anemone*. Kansas. Swingle, 843. Perithecia hypophyllous, black, membranaceous, prominent, subglobose or hemispheric, then flattened, thickly scattered over the surface of the leaf, which assumes a dirty brownish look both above and below, but without any definite spots; sporules fusiform, curved, nucleate and, for the most part, with endochrome finally three times divided, $30-40 \times 2\frac{1}{2}-3 \mu$, hyaline. This does not seem to be *Septoria silvicola*, Desm., but we have no specimens of that species for comparison.

SPHÆRELLA CRUS-GALLI, E. & K.—On withered leaves of *Panicum crus-galli*. Manhattan, Ks., 1887. Swingle. Perithecia buried in the substance of the leaf and visible on both sides, but more prominent above, evenly scattered or in small groups, with scattering perithecia intermediate, globose, $100-115 \mu$ in diameter, with a broad, round opening above; asci oblong, $50-55 \times 10-12 \mu$, without paraphyses; sporidia crowded, oblong-fusoid, subinequilateral, 1-septate and mostly constricted at the septum, hyaline, $14-16 \times 4 \mu$. This is quite different from *Sphærella Panicum*, Cke., which is on purplish spots and has 3-septate sporidia. *S. Maydis*, Pass., is also different, having rather larger perithecia more distinctly grouped and (see spec., in Rab-Winter's Fungi, No. 1,851) has sporidia fusoid, $16-20 \mu$ long. This is also different from *S. Muhlenbergiae*, Ell., which, by the way, is a good species and quite distinct from either *S. graminicola*, Fckl., which has larger asci and sporidia or *S. pusilla*, Awd. *S. graminicola*, Fckl., see spec., in Rehms. Ascom., 794, and F. Eur., 3,446, has asci $75 \times 12 \mu$ and sporidia $15-20 \times 3\frac{1}{2}-4\frac{1}{2} \mu$.

OBITUARY—DR. GEORG WINTER.

It is with the deepest regret that we announce the death, after long and severe sickness, of our most valued friend, Dr. Winter, which took place the 16th of August, at Connewitz, near Leipsig. Although of world-wide mycological fame, he had scarcely more than reached the prime of life: he was not yet quite forty years of age at the time of his death. His loss will be felt by every student of fungi. We think at once of his important though unfinished work, the "Pilze" of Germany, the Exsiccata, so carefully edited and indispensable to all, the numerous monographs and critical studies recently published or promised soon, and in vain look for others as able to carry on what was so well begun. A brief outline of his life and work was given in this JOURNAL last January and to this (p. 8) the reader is referred, where also a list of his mycological publications is given.

OBITUARY—H. W. RAVENEL.

FROM THE "RECORDER," AIKEN, S. C., JULY 10, 1887.

Henry William Ravenel was born in the parish of St. Johns, Berkeley, S. C., May 19, 1814, and died at Aiken, after a protracted illness, on Sunday, July 17, 1887. After receiving the usual high school training, he entered the South Carolina College and graduated with distinction in 1832, in the class with Jas. R. Aiken, W. M. Armstrong, C. Richard Furnham Baker, John Lesesne, John H. Means and others. Soon after graduation, he engaged in planting in St. Johns, Berkeley, and continued it for twenty years. Early in life, he began his botanical researches, and his natural fondness for these pursuits was increased by an infirmity of hearing, which cut him off from most of the ordinary occupations of life.

In the course of his career, he has steadily added to his herbarium, and has left in the possession of his family probably the most complete collection of both *Phenogamous* and *Cryptogamous* plants to be found on either side of the Atlantic.

He prepared several volumes of fungi, called "*Fungi Caroliniani Exsiccati*," which were published in this country and attracted marked attention. He also acted as American botanist in connection with his friend, Prof. Cook, of London, Eng., in preparing several other volumes of fungi. These last were published in England in editions of only one hundred copies each.

In 1869 he went as botanist with Prof. Gamgee, by appointment of the United States government, to investigate the cause of the cattle disease then prevailing in Texas. It was thought that the disease was due to a fungoid growth on certain plants which were eaten by the cattle, and as Dr. Ravenel was known to have made exhaustive researches on the subject of fungi, he was selected for the work. A learned and elaborate report was published from the data obtained on this expedition and it was ascertained that the disease was not due to the presence of fungi.

In 1849 he was elected correspondent of the Academy of Natural Sciences, of Philadelphia, Pa. In 1833 he was elected member of the Zoologisch-Botanische Gesellschaft, of Vienna, Austria, and in 1886 the degree of LL. D. was conferred on him by the University of North Carolina. Such were the literary and scientific distinctions that rewarded the labors of this modest gentleman and diligent student. Had it not been for his deafness, he would never have been suffered to remain in Aiken, but would have long since occupied a professor's chair in some famous institution of learning. For a couple of years, he edited the agricultural department of the weekly *News and Courier* with great ability, and at the time of his death was botanist to the state department of agriculture.

Dr. Ravenel was married in 1735 to Miss Elizabeth Gilliard Snowden, of St. Johns, Berkeley, who died in 1855. By this marriage, he had six children, four of whom survive, one a son living at Darien, Ga., and all useful and honored members of society. In 1858 he married Miss

Mary Huger Dawson, of Charleston, who, with five children, all daughters, survive to mourn their irreparable loss.

Dr. Ravenel moved to Aiken in 1853, consequently he has been a resident for thirty-four years. For many years he was a vestryman of Trinity church, Black Oak, in St. Johns, Berkeley, and for the last thirty-three years has been a vestryman of St. Thaddeus church, Aiken, a considerable portion of the time as senior warden.

The war swept away nearly all of his property, but he met his adversity with Christian fortitude and courage, doing his duty faithfully unto the end.

NEW LITERATURE.

BY W. A. KELLERMAN.

"VEGETABLE PARASITES AND EVOLUTION." Address by Wm. G. Farlow, M. D., before the section of biology, A. A. A. S., 1887. From Proc. Am. As. Adv. Sci., Vol. XXXVI.

"A LIST OF WORKS ON THE NORTH AMERICAN FUNGI." By W. G. Farlow and William Trelease, Cambridge, Mass. Issued by the Library of Harvard University.

The list is complete, with the exception of *Schizomycetes*, up to 1887, of those "works of greater or less value to working botanists," excluding those of a popular and indefinite character.

"DISEASE OF TOMATOES: DACTYLUM ROSEUM (BERK.) VAR." By Worthington G. Smith. Gardener's Chronicle, Aug. 6, 1887.

This fungus, usually considered to be *saprophytic*, was found to be a true parasite, living upon the growing tomato plants. Illustrations accompany the article. The fungus is considered to be but an aberrant form of *D. roseum*, though the author says it would likely be considered a new species by some observers, on account of its somewhat different form and especially its parasitic habit.

"REVISION OF SCOTCH SPHÆROPSIDÆ AND MELANCONIÆ." By Prof. J. W. H. Trail. The Scottish Naturalist, July, 1887.

"KRYPTO GAMEN-FLORA." Pilze, von Dr. G. Winter. 28th Lieferung, pp. 1-64. Hysteriaceæ, Discomycetes (Pezizaceæ) bearbeitet von Dr. H. Rehm. Leipsic, 1887.

"ASCOMYCETES OBSERVES AUX ENVIRONS DE LIEGE PAR V. MONTEN, II." Bulletin Soc. Roy. Bot. de Belgique Tome. vingt-sixieme. Premier fascicule, 1887.

"CONTRIBUTIONS A LA FLORE MYCOLOGIQUE," par Mmes. E. Bommer et M. Rousseau. l. c.

"BEITRÆGE ZUR FLORA DER ROST. U. BRAND-PILZE THUERINGIENS." Von G. Oertel. Fortsetzung. Deutsche botanische Monatsschrift, Juni, 1887.

"OBSERVATIONES ANALYTICÆ IN FUNGOS AGARICINOS." Auctore Doct. P. Voglino.

"THE IDENTITY OF PODOSPHÆRA MINOR, HOWE, AND MICROSPHÆRA FULVOFULCRA, CKE." (with plate). Martha Merry. Botanical Gazette, August, 1887.

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MANHATTAN, KANSAS, OCTOBER, 1887.

No. 10.

SYNOPSIS OF THE NORTH AMERICAN SPECIES OF XYLARIA AND PORONIA.

BY J. B. ELLIS AND B. M. EVERHART.

(Continued from page 102.)

23. *XYLARIA CARPOPHILA* (Pers.) Obs. Myc., I, 19. On decaying beech nuts. Carolina (Schw. & Rav.), Pennsylvania (Everhart.)

Stroma simple, flexuous, filiform, about one inch high and one millim. thick, round or a little spatulate, flattened or sometimes forked at the apex, white at first, becoming nearly black; fertile club thicker and mostly shorter than the stipe, which is more or less villose; perithecia tuberculose-prominent, much as in *X. filiformis*, apex of the club sterile; asci cylindrical, pedicellate, spore-bearing part about $75\ \mu$ long and six μ wide; sporidia obliquely uniseriate, brown, inæquilateral, obtuse, $12-16 \times 4-5\ \mu$.

b. *Capitulum furcate or divided.*

24. *XYLARIA CORNU-DAMÆ*, Schw. Syn. N. Am., 1,163. On old logs partly buried in the ground. Bethlehem, Pa., (Schw.), Carolina (Ravenel.)

Suberose, quite black, rather stout, subradicate, variously bent, black-flocculose below, compressed and dilated and furcate-branched at the apex, the end of the branches mostly abruptly acuminate, resembling the horns of a deer. In the young plant the upper part is cinereous-squamose, elsewhere covered with an extremely short, black tomentum; perithecia rather large, somewhat prominent; ostiola obtuse, short-cylindrical; sporidia $15-26\ \mu$ long, curved and narrow.

The foregoing is taken from Schw. Syn. N. Am. and Saccardo's Sylloge. The specimens in Rav. Car., I, 45, are quite simple (without any branches), linear clavate, 2-3 inches high, stem $1-1\frac{1}{2}$ inches, club $1-1\frac{1}{2}$ inches and about four millim. thick, probably considerably thicker when fresh; perithecia covering the surface of the club, somewhat prominent, three fourths millim.; asci long ($150\ \mu$) and narrow; sporidia uniseriate, oblong-fusoid, brown, slightly curved, ends often acute, $15-20 \times 4-5\ \mu$. Specimens collected in West Chester, Pa., are some of them simple and undivided like the Carolina specimens, others have the

apices of the clubs divided into 2—3 short branches, and in others again there are two or three distinct clubs arising from the same stem, erect and parallel. The color is at first white, becoming black at maturity. The stem, both in the Carolina and Pennsylvania specimens, is nearly or quite smooth above, but the rooting base is covered with a ferruginous tomentum (which may perhaps have been black in the fresh specimen.)

25. *XYLARIA HYPOXYLON* (Linn.) Grev. Flor. Ed., p. 355. Nits. Pyr. Germ., p. 5. *Clavaria Hypoxylon*, Linn. Fl. Suec., Ed. II, p. 457. *Sphaeria Hypoxylon*, Pers. Obs. Myc. I, p. 20. On decaying wood and bark, common throughout.

Stroma erect, compressed, dilated and variously divided and branched above, more rarely round and simple; stem covered with a black, hirsute-tomentose coat; perithecia ovate-globose, prominent, investing and roughening the upper part of the stroma, but leaving the tips of the branches sterile; asci cylindrical, 8-spored, on oblong pedicels, spore-bearing part 65—75 μ long; sporidia navicular-ellipsoid, inaequilateral, obtuse, 10—12 x 3½—5 μ (12—14 x 5—6 μ , Sacc.) As might be expected in a species having so wide a range, many different forms occur. Around Newfield, where it is very common on decaying stumps, railroad ties and pieces of wood decaying on the ground, it is usually found about one inch high, generally divided a little above the middle into 2—3 somewhat spreading branches. The hymenial surface is at first whitened by the minute, subfusoid conidia. Oftener than otherwise, the plants dry up in this conidial stage and remain permanently white (the tips of the branches having a faint rosy tint) without ever reaching the ascigerous state. The same observation applies to the West Chester specimens, except that they seem to be generally a little larger. A dwarf form has been found at Newfield on an old oak log, in which the stem is only from ½—1 cm. high and the fertile head about 2 x 1 millim., with only a very short, obtusely-pointed, sterile apex. The fruit and other characters are the same as in the usual form. The dwarf form must come very near the variety *cupressiformis*, Pers., if not the same. Specimens from British Columbia, sent by Prof. John Macoun, of the Canadian Geol. and Nat. Hist. survey, are 5—8 cm. high, with the stem distinctly rooting, 2—3 millim. thick and the fertile part flattened and dichotomously divided into 3—6 short (one half cm.), acute lobes or branches; some of the specimens, however, were entirely simple. In all these different forms, there is hardly any appreciable variation in the size or shape of the sporidia, which average about 10 x 4 μ .

26. *XYLARIA SUBTERRANEA*, Schw. Journ. Acad. Nat. Sci., Phil., Vol. V, tab. 1, fig. 3; Syn. N. Am., No. 1,162.

Stroma filiform (3—6 inches long), simple or branched, dark brown or more or less hirsute-tomentose below, becoming finally nearly smooth; perithecia 250—300 μ in diameter, depressed-globose, with a short, acute ostiolum, investing the upper half of the stroma, except the paler, sterile apex; asci long and narrow, with a slender, pedicellate base (spore-bearing part about 80 μ long); sporidia uniseriate, oblong-navicular or

oblong-fusoid, brown, rather obtuse, slightly curved, $12-14 \times 4 \mu$. The matrix is invested with a slimy membrane, from which the stipes arise and to which their appressed bases are often attached for the distance of an inch or more before beginning their free ærial growth. The thickness of the stroma at the base is 2—3 millim., gradually tapering to the apex except where thickened by the investing layer of perithecia. First found by Dr. Torrey on decaying timbers in the mines in northern New Jersey, and afterwards by Schweinitz, growing from the decaying wood of an old cistern at Bethlehem, Pa. The specimens distributed in N. A. F., 771, were found by Mr. Eugene A. Rau, near the Schweinitzian locality, on an old wooden pump standing in a limestone spring.

27. *XYLARIA ACUTA*, Pk. 25th Rep. N. Y. State Mus., p. 101.

"Plant gregarious or subcæspitose, $1-1\frac{1}{2}$ in. high; club cylindrical or subfusiform, generally with a sterile, acute apex, blackish-brown, central substance white, with a radiating structure, stem involved in a dense, purplish, mucedinous tomentum, which causes it to appear bulbous; perithecia globose, black; spores uniseriate, elliptical, sometimes slightly curved, colored, .0006—0007 in. long ($15-17 \mu$). On mossy, decaying logs in woods. Greig. September. This species is related to *X. digitata*, from which it differs in its less cæspitose habit and in the character of the stem and central substance. According to Fries, *X. digitata* has a simple, central pith; in this species, the central pith is radiating, as in *X. polymorpha*."

c. *Capitulum subglobose*.

28. *XYLARIA PEDUNCULATA* (Dicks.) Fr. Summ. Veg. Scand., p. 382; Nitsch. Pyr. Germ., p. 6; *Sphaeria pedunculata*, Dicks., Crypt. Brit., IV, p. 27.

Stroma rather stout, flexuous, dark brown, simple or more rarely sparingly branched, cinereous at first; fertile club thickened, subglobose, roughened by the prominent perithecia, apex acute and sterile; asci cylindrical, briefly pedicellate, 8-spored; sporidia broadly ovate, very obtuse, straight, obliquely uniseriate, dark brown, becoming nearly black, surrounded by a thick, mucose, hyaline coat, $40 \times 20 \mu$. The habit given in Sylloge is on wet ground where manure has lain, in France, Britain and Missouri. The specimens in Plowright's *Sphæriacei Britanici*, 216 (the only ones we have seen), have the stroma simple, about five millim. high and one millim. thick at the base, attenuated slightly above to the conico-globose head, which is about $1\frac{1}{2}$ millim. high, with a short, mucronate, sterile tip and about $1\frac{1}{2}$ millim. broad; asci (spore-bearing part) $114-125 \times 18 \mu$; sporidia almond-shaped, subhyaline at first, becoming opaque, $18-20 \times 15 \mu$, surrounded at first by a hyaline coat. Plowright's specimens are on rabbit's dung. It will be noticed that the sporidia are exactly like those of a *Sordaria*. The difference between the measurements of the sporidia given in Sylloge ($40 \times 20 \mu$) and ours is remarkable. This discrepancy does not seem to be due to the shrinking of the sporidia, which were apparently in their normal state, nor have we ever observed that the sporidia of any of the ascigerous fungi lose much or any of their original size in said specimens.

Since sending off the copy of "Synopsis of Xylaria," we have received from Prof. A. P. Morgan the two following species collected by him at Preston, Ohio, and determined by Dr. M. C. Cooke.

29. *XYLARIA CASTOREA*, Berk.—Fl. New Zealand, p. 204. The description in Sylloge, I, p. 329, is as follows: Stipe short at first, spongy-velutinous, finally bare, rugose; club obtuse, ovate or subelliptical, much compressed, minutely areolate, roughened by the prominent ostiola; asci narrow; sporidia ovoid-oblong, fuliginous, 10 μ long. On rotten wood. New Zealand. Stroma 2—3 cm. high, 12—16 millim. thick. The Ohio specimens are caespitose and arise from a spongy, sterile base similar to that of *X. corniformis*, only larger. They have the asci (spore-bearing part) 50—55 μ long; sporidia uniseriate, opaque, inaequilateral-elliptical, 8—9 x 4—4½ μ . Judging from these specimens, the only definite characters separating *X. castorea* from *X. corniformis* are the caespitose growth and compressed clubs of the former. The asci and sporidia are the same in both and the general appearance is similar.

XYLARIA CONOCEPHALA, B. & C.—Journ. Linn. Soc., X, p. 379. The description given is as follows: "Maxima, caespitosa, e basi obtusa conica, umbrina, rimulosa, exsiccatione hic illic contracta; ostioliis sparsis prominulis; stipite brevi longitudinaliter sulcato-rugoso. On dead wood. Stem one half an inch, head 3½ high, 1¼ thick; sporidia cymbiform, .0008—.0006 inch long." In the Ohio specimens, the stroma is caespitose and branched from the base, dividing into seven or eight elongated-clavate, erect branches, about three inches high and one cm. thick (in the dry state). There is no distinct stem, except the irregular-shaped mass formed by the connate bases of the branching stroma, which is white and spongy within. The perithecia are subovate and nearly one millim. in their longest diameter and extend down on the common base; ostiola large, subconic; asci (spore-bearing part) 100—112 μ long; sporidia uniseriate, navicular, opaque, 20—22 x 5 μ .

PORONIA, Willd. Flor. Berol. Prod., p. 400.

Stroma carnose-suberose, at first clavate or obconic, becoming cup-shaped, stipitate or sessile; perithecia immersed in the upper discoid surface of the stroma, membranaceo-carbonaceous, black; asci cylindrical, 8-spored; sporidia ellipsoid, brown, fimicolous.

1. *PORONIA PUNCTATA* (Linn.) Fr. Summ. Veg. Scand., p. 382; Nitsch. Pyr. Germ., p. 16; *Peziza punctata*, Linn., Fl. Suec., p. 458; *Sphaeria Poronia*, Pers. Syn., p. 15.

Stroma erect, simple, obconic or clavate at first, soon open above and cup-shaped, with the exposed disk white, finally often expanded and flattened, and nearly sessile, ½—1 cm. across; disk at first clothed and whitened by the minute, globose conidia, finally black-punctate from the projecting black ostiola of the subjacent perithecia; asci cylindrical, briefly pedicellate, 125—150 x 16—18 μ ; sporidia uniseriate, elliptical, with the ends rounded or more or less acute, surrounded at first with a hyaline coat, soon brown or opaque, 17—25 x 10—14 μ . We have fine specimens of this species from Prof. F. W. Cragin, of Topeka, Kansas, and also specimens from Colorado, communicated by Mr. E. A. Rau. Habitat on horse dung.

2. *PORONIA OEDIPUS*, Mont. Syll. Plant Crypt., p. 209; Nits. Pyr. Germ., p. 20. On dung. Alabama (Peters), Texas (C. Wright).

Stroma simple or branched, erect, dark brown, becoming glabrous, striate when dry, clavate-thickened at the base and attenuated above to the apex, which is expanded into a cup-shaped disk, black externally, white within and black-punctate from the projecting ostiolar, as in the preceding species; asci subcylindrical, very briefly pedicellate, 8-spored, $120 \times 24 \mu$, pseudoparaphyses very long, stout, filiform, septate; sporidia uniseriate or subbiseriate, ovate, straight, dark, surrounded by a thick, hyaline coat at first, $28-30 \times 16 \mu$. Specimens collected in Cuba by Wright and sent us by Prof. Farlow have the stems subconnate at base, about three cm. high and two millim. thick at base, the terminal disk about three millim. broad.

ADDITIONS TO HYPOCREACEÆ.

BY J. B. ELLIS AND B. M. EVERHART.

CORDYCEPS SPHINGUM, Tul.—Sel. Carp. III, p. 12. (*Isaria Sphingum*, Schw., Syn. Car., 1298 [conidia.]) On a dead larva in its cocoon, attached to a rotten limb lying on the ground in the swamp. Newfield, N. J., Aug. 7, 1887. Stromata numerous, about thirty in the single specimen found, thread-like, about five cm. high and rather less than one millim. thick, cinereous, nearly smooth and glabrous or slightly white-farinose-tomentose, bulbous at the base and more or less undulate and bent, especially below and within the cocoon, which they seem to have penetrated with some difficulty; perithecia superficial, cylindric-conic, $200-225 \mu$ high, $125-150 \mu$ thick, rounded above, chestnut color; ostiolum not prominent; asci linear-lanceolate, $150-200 \times 6-7 \mu$ when young with a depressed, conical tip about four μ wide; sporidia filiform, nucleate, about as long as the asci and about two μ wide, probably finally separating into joints or segments. The larva from which the fungus grows is about three cm. long and one half cm. thick, and the stipes or stromata arise from all the segments of the body. Some of the stromata were sparingly branched above.

[In Tulasne's figure the fungus is represented as growing from the perfect insect, and the perithecia are said to be of a pale red color ("pallide rubentia"). From these and other considerations, I was at first inclined to consider this as a new species, but my colleague, Mr. Everhart, having carefully examined the specimen, assured me that it could not be specifically distinct, and I am now convinced that he is right.—J. B. E.]

CORDYCEPS HERCULEA, Schw.—A fine specimen of this species has been sent from Ohio by Prof. A. P. Morgan. When fresh it was about three inches high and half an inch thick, growing from some dead larva of considerable size. The fertile head, which occupies about an inch of the upper part of the stem, leaving a short, rather obtuse, sterile tip, is of a light yellow color and roughened by the somewhat prominent,

closely-packed perithecia, which are about $150\ \mu$ in diameter, with slightly prominent ostiola, of a pale, radiate-fibrous structure; asci $200\text{--}225 \times 6\text{--}7\ \mu$, gradually attenuated to the base and containing eight filiform sporidia which separate into joints $6\text{--}8 \times \frac{3}{4}\text{--}1\ \mu$, with the ends slightly swollen.

NOTE.—In the description of *Cordyceps militaris*, on page 30, Vol. II, of this JOURNAL, the sporidia are said to break up into joints $\frac{1}{2}\text{--}\frac{3}{4}\ \mu$ long—it should be $2\text{--}3\ \mu$ long. The sporidia are seen to best advantage while the specimen is drying, when they are discharged copiously, so that the clavate head appears to be enveloped in a white mold.

In the synopsis of *Hypocreaceae* the following species was omitted:

CORDYCEPS INSIGNIS, Cke. & Rav.—Grev. XII, p. 38. On dead larvæ buried in the ground. Seaboard of South Carolina. Ravenel, 3251. “Lividopurpurea; stipite recto (3—4 cm.), pallido, sulcato, æquali; capitulo subgloboso, ovato, e peritheciiis leniter asperulo; peritheciiis minimis, confertis, ovatis; ostiolo punctiformi, obscuriore; ascis cylindraceis, longissimis (.6 millim.), dissilientibus. Somewhat resembles *C. Entomorrhiza*, but is larger and more robust; stem about 4—5 millim. thick and longitudinally sulcate; capitulum $1\frac{1}{2}$ cm. long and one cm. broad, livid purple. In many respects it reminds us of *Cordyceps capitata*.”

HYPOCREA SUBCARNEA, E. & E., n. s.—On dead limbs of *Lonicera* (Cult.) Newfield, N. J., May, 1887. Stroma effused, thin, cracked, dirty flesh color, much resembling *Corticium scutellare*, B. & C. Perithecia carnose, pale, minute ($80\ \mu$), buried in the stroma and barely visible under the lens as minute specks, giving the stroma a punctate appearance; asci subcylindrical, sessile, without paraphyses, $30\text{--}35 \times 5\text{--}7\ \mu$; sporidia uniseriate or partly biseriate above, subhyaline (with a yellowish tint), oblong-elliptical, 1—2-nucleate, $3\frac{1}{2}\text{--}4\frac{1}{2} \times 2\text{--}2\frac{1}{2}\ \mu$. Outwardly this scarcely differs from *H. corticiicola*, E. & E., except in the flesh-colored tint of the stroma, but the sporidia are very different, much like those of *H. consimilis*, Ell., from which, however, it is quite distinct. This species is evidently a close ally of *H. corticiicola*, E. & E., and *H. hypomycella*, Sacc., but, applying the carpological classification, it would be placed in another genus and in a different section.

HYPOMYCES GEOGLOSSI, E. & E.—JOURN. MYCOL., II, p. 73. This has been found again near the original locality, not on *G. glabrum*, but on *G. hirsutum*, Pers., and from the fresh specimens the following notes were taken: The affected plants are more rigid and the stem is considerably enlarged, for the parasite not only occupies the hymenium but extends down on the stem nearly to the base, giving the whole a slightly rufous or pale liver-colored hue. The fresh perithecia, which are very soft, are $100\text{--}150\ \mu$ in diameter, depressed-globose and can hardly be said to be immersed, but form a compact layer on the hairy coat of the host without penetrating to any appreciable extent into its substance. The asci are clavate-oblong, $35\text{--}40 \times 6\text{--}7\ \mu$, sessile and without paraphyses; sporidia, as before, clavate-oblong, mostly two-nucleate and $7\text{--}10 \times 2\frac{1}{2}\text{--}3\ \mu$, hyaline. The measurement of the asci, as originally published, is

erroneous. The correct measurement is as here given and is the same as marked on the original package. This differs from the ordinary type of *Hypomyces* in the absence of any distinct subiculum.

HYPOMYCES AURANTIUS (Pers.)—Specimens of this species were found associated with *H. polyporinus*, Pk., at Newfield, N. J., about the first of July, 1887, on old *Polyporus versicolor*, Fr., on a decaying oak log. From the fact that the two species occurred often on the same specimen of *Polyporus*, the suspicion arose that *H. polyporinus* might be only the earlier stage of growth of *H. aurantius*, but a careful comparison showed that this could hardly be the case. The perithecia of *H. aurantius* are larger (one fourth millim.) and, though somewhat pale at first, soon assume a deep orange tint; the mycelium also, which at first stains the matrix light yellow, soon assumes the same color as the perithecia. The asci, which are narrow-cylindrical, are about $100 \times 4 \mu$ and the uniseriate, partly overlapping, fusoid sporidia are $16-24 \times 4-5 \mu$, with a short acumination at each end and the endochrome more or less distinctly divided in the middle. The specimens agree well with those received from Dr. Plowright, but the perithecia are rather more pointed above than represented in his figure in Grevillea, pl. 150. The conidial stage, *Diplocladium minus*, Bon., was found associated with the ascigerous specimens. *H. polyporinus*, Pk., has the perithecia smaller (150μ) and paler, becoming finally of a pale apricot color. The mycelium also, though occasionally of a pale yellow color at first, never assumes the deep orange tint seen in *H. aurantius*. The sporidia of *H. polyporinus* are of the same shape as those of *H. aurantius* but smaller, mostly about $15 \times 3 \mu$. In both, the perithecia are distinctly ovate, though in *H. aurantius* they are quite obtuse when young. This last-named species has also been found at Vermilion Lake, Minnesota, by Mr. E. W. D. Holway.

HYPOMYCES CHLORINUS, Tul. (?)—Sel. Carp., III, 59. Parasitic on the mouths of the tubes of some small *Boletus*. Newfield, N. J., Aug. 16, 1887. Mycelium, white cottony, much branched, forming a thin, white coat over the entire surface of the host; conidia golden yellow (under the microscope), large, $25-35 \times 12-15 \mu$, narrow-elliptical or oblong, marked with several longitudinal grooves or striæ and borne singly at the ends of the branches of the mycelium. These conidia resemble somewhat an old fashioned, long musk melon or an ear of Indian corn; perithecia globose, minute ($112-120 \mu$), forming a continuous layer over the tubes of the *Boletus* and extending down the stem, nearly hyaline at first, finally light yellow, scarcely projecting above the mycelial layer in which they are bedded, presenting very much the appearance of *Hypocrea citrina*; asci cylindrical, about $65 \times 3 \mu$; sporidia uniseriate, hyaline, ovate, one-septate, constricted at the septum, $7-9 \times 2\frac{1}{2}-3 \mu$, ends rounded. Whether the conidial stage noted by Tulasne really belongs here is uncertain. The "microconidia" he speaks of, we do not find, nor do we notice any green color, but the "macroconidia" above noted agree well in size and shape with those described by him, and the habitat (*Boletus sub-tomentosus*, apparently) makes it somewhat probable that the reference of our *Hypomyces* to *H. chlorinus* may be correct.

ACROSPERMUM RAVENELII, B. & C.—Having recently received from Mr. B. T. Galloway good specimens of this species on dead leaves of *Cercis Canadensis*, collected in Boone county, Mo., June, 1887, we can add to the brief description on p. 5 of the current volume the following notes and measurements :

Perithecia clavate-cylindrical, cinereous black, of fibrous texture, contracted a little above the base and rather obtuse at the apex, 300—350 μ high and 70—80 μ thick; asci about 200 x 3 μ , containing eight filiform, continuous, yellowish hyaline sporidia nearly as long as the asci. Quite different from *A. foliicolum*, B. & C., which has longer, liver-colored or chestnut-colored perithecia.

NECTRIA RUBEFACIENS, E. & E., n. s.—Parasitic on thallus of some lichen on various dead limbs lying on the ground. Newfield, N. J. Perithecia globose, 80 μ in diameter, smooth, or roughened with scattered, rudimentary, glandular-like hairs, subastomous, of fine cellular texture, pallid at first, becoming orange-red; asci broad clavate, 35—40 x 10—12 μ , without paraphyses; sporidia irregularly crowded, oblong-cylindrical, hyaline, uniseptate and constricted at the septum, distinctly curved, 14—18 x 2½—3 μ . The thallus of the lichen (*Parmelia tilhacea* [?]) turns dull red (bright red inside). The perithecia are scattered and superficial. This species has been observed now for the past eight years and seems to be quite distinct from any of the other lichenicolous species.

NEW SPECIES OF FUNGI FROM VARIOUS LOCALITIES.

BY J. B. ELLIS AND B. M. EVERHART.

DIATRYPELLA PUSTULATA, E. & E.—On dead twig of *Lonicera* (Cult.) Newfield, N. J., May, 1887. Stromata tuberculiform-pustulate, gregarious, white inside, sometimes confluent, but mostly standing singly, closely covered by the blackened epidermis, which is not ruptured but merely pierced by the short, stout, cylindrical ostiola, which are mostly about four-stellate cleft at the tips; perithecia few in a stroma (1—4), quite often only one, globose, ½—¾ millim. in diameter; asci rounded above, contracted below into a slender base; sporidia allantoid, yellowish-hyaline, 5—8 x 1½ μ . The part of the branch occupied by the fungus is deeply penetrated by a black, circumscribing line. This is certainly closely allied to *D. Tocciana*, DeNot., which also has the stroma closely covered by the epidermis and which this also resembles in other respects, but differs from that species and its allies in its prominent ostiola, which, when fully developed, are one fifth to one third millim. high. The bases of the perithecia penetrate the wood, but when the bark becomes loosened they remain attached to it and fall away with it, leaving the surface of the wood pitted with cup-shaped cavities.

SPHÆRIA (*AMPHISPILÆRIA*) *ORONOENSIS*, E. & E.—Perithecia scattered, subcarbonaceous, black, roughish, subsuperficial, the base only slightly sunk in the wood, small (about one sixth millim.), globose or slightly depressed-globose; ostiolum papilliform; asci linear, $75 \times 5 \mu$ (spore-bearing part about 50μ long), surrounded with abundant paraphyses; sporidia uniseriate, oblong elliptic, brown, uniseptate but not constricted, $6-8 \times 2\frac{1}{2}-3 \mu$, cells equal or the lower one a little narrower. On rotten wood. Orono, Maine, November, 1886. Prof. F. L. Harvey, No. 57. Apparently near *Sphæria sardoa*, DeNot.

LASIOSPHÆRIA SUBVELUTINA, E. & E.—On rotten magnolia wood. Newfield, June 26, 1887. Perithecia superficial, black, conico-hemispherical, $150-200 \mu$ in diameter, sparingly clothed with spreading, straight, sparingly septate, rather obtuse, black hairs, subdiaphanous above, $100-150 \times 4-5 \mu$; asci clavate-cylindrical, about $150 \times 12 \mu$, without paraphyses; sporidia fusoid, hyaline, biseriate, slightly curved, ends rather obtuse, granular, becoming 3—5-septate, $22-30 \times 4-4\frac{1}{2} \mu$. Closely allied to *S. atrobarba*, C. & E., but hairs of perithecia longer and of equal diameter throughout and sporidia fusoid and hyaline. The surface of the wood itself, in both these species, is thinly clothed with hairs similar to those growing on the perithecia. The sporidia are much like those of *S. atriella*, C. & E., but that species has larger, subdepressed perithecia without hairs of any kind.

LEPTOSPHÆRIA ANOMALA, E. & E.—On dead herbaceous stems. Scofield, Utah, June, 1887. S. J. Harkness. Perithecia gregarious, membranaceous and of rather coarse, cellular structure, about one third millim.; black, smooth, subspherical, at length slightly collapsing above, at first covered by the epidermis, finally erumpent; asci oblong-cylindrical, about $100 \times 20 \mu$, sessile, with evanescent, filiform paraphyses; sporidia biseriate, broad, oblong-fusoid, one-septate, inæquilateral and slightly curved, pale, straw yellow, constricted at the septum, $30-35 \times 10-12 \mu$, ends obtuse. This has all the essential characters of *Leptosphæria* except the one-septate sporidia. On the same stems is found the following, which is apparently its conidial stage and may indicate a relationship with the *Hypocreaceæ*.

CYLINDROCOLLA DIFFLUENS, E. & E.—On dead herbaceous stems. Scofield, Utah, June, 1887. S. J. Harkness. Sporodochia flesh-colored (orange when dry), appressed, marginless, appearing to the naked eye as mere orange-colored blotches about one millim. in diameter, at first subtuberculose; conidia oblong or cylindrical, varying in length from $4-12 \mu$ and about $1\frac{1}{2} \mu$ wide, hyaline and continuous, concatenate, the chains of conidia branching in a tree-like manner and separating entirely quite to the base, without any distinct sporophores, as in *C. Urticæ*, which this in other respects much resembles.

OPHIOPOLUS HAMASPORUS, E. & E.—On fallen leaves of *Quercus tinctoria* (?). Manhattan, Ks., July, 1887. W. T. Swingle. Perithecia scattered, globose, membranaceous-carbonaceous, $\frac{1}{4}-\frac{1}{3}$ millim. in diameter, black, buried in the substance of the leaf except the convex-flattened

apex, leaf sometimes blackened around the perithecia, indicating the presence of an imperfect stroma; asci $70 \times 8-10 \mu$, narrowed above but obtuse; paraphyses (?); sporidia eight in an ascus, filiform, multinucleate, yellowish-hyaline, $30-35 \times 1\frac{1}{2} \mu$, narrowed to a point below and about one third of the lower part bent almost to a right angle or even curved into a hook (*i. e.*, after the sporidia have escaped from the asci). The general aspect is that of *Didymosphæria cupula*, Ell., only the perithecia are not collapsed. The ostiolum is indistinctly papillæform.

LOPHIOSTOMA (LOPHIOTREMA) ÆQUIVOCUM, E. & E.—On decorticated wood of some deciduous tree. British Columbia, May, 1887. Prof. John Macoun. Perithecia gregarious, erumpent-superficial, black, nearly smooth, depressed-conic or subglobose, about one third millim. in diameter; ostiolum subconic, slightly compressed; asci subcylindrical, about $80 \times 5 \mu$, narrowed below into a short, stipitate base; paraphyses filiform; sporidia one-seriate, oblong-fusoid, subobtuse, yellowish-hyaline, three-septate and constricted at the middle septum. sometimes also at the other two, $12-14 \times 3-3\frac{1}{2} \mu$. The ostiolum varies considerably, being sometimes distinctly compressed, sometimes regularly conical and occasionally imperfectly radiately three-cleft.

SORDARIA LUTEA, E. & E.—On rotten wood (Maple and Kalmia) in swampy woods. Newfield, N. J., November, 1879, and August, 1887. Perithecia gregarious, one half millim. in diameter, membranaceous, conic-globose, covered, except the papillose-conic, black ostiolum, with a dense, light yellow tomentum composed of branching, slightly roughened hairs; asci lanceolate, rounded and perforated at the apex, $190-130 \times 15 \mu$; sporidia at first vermiform and greenish-yellow, finally almond-shaped and opaque, with a cylindrical, curved appendage $30-35 \times 4 \mu$ attached to its base. Very rarely in the young sporidium there is also a short, slender appendage at the apex. The asci are very evanescent. The yellow coat also turns black at maturity. A closely allied species, with sporidia $22-25 \times 12-15 \mu$, has been met with on dead herbaceous stems, but we have not sufficient material to give a full description.

(To be continued.)

MELANCONIS DASYCARPA, E. & K.

JOURN. MYCOL., II, p. 3. I strongly suspect that this species is not distinct from *M. Everhartii*, Ell. The only real distinctive character is the appendiculate sporidia in the first named species. When *M. Everhartii* was published, it was supposed to have sporidia without appendages, but a re-examination of the few original specimens still in my possession shows that the sporidia are at first appendiculate, but the appendages are soon absorbed. This is also the case with *M. dasycarpa*. The West Chester specimens (N. A. F., 1565) were well matured, so that the appendages were overlooked. If my observations are now correct, *M. dasycarpa*, E. & K., is only a synonym of *M. Everhartii*, Ell. The correctness of this may be verified or refuted by an examination of the specimens in N. A. F., Nos. 1561 and 1565. J. B. E.

NEW LITERATURE.

BY W. A. KELLERMAN.

- "NEW AUSTRALIAN FUNGI." By M. C. Cooke. Grevillea, September, 1887.
- "NEW BRITISH FUNGI." By M. C. Cooke. l. c.
- "BRITISH PYRENOAMYCETES." By G. Masee. l. c.
- "TWO REMARKABLE FUNGI: CEREBELLA PASPALI, CKE. & MASS., AND HEMIARCYRIA APPLANATA, CKE. & MASS." By M. C. Cooke. l. c.
- "REHM: ASCOMYCETEN." Fasc., XVIII. Hedwigia, Mai and Juni, 1887.
- "BEMERKUNGEN UEBER EINIGE IN DEN LETZTEN JAHREN BESCHRIEBENE MYXOMYCETEN." Von M. Riciborski in Krakan. l. c.
- "FUNGI ALIQUOT NOVI IN TURKESTANIA." A Dre. Walther lecti: Auctore. P. A. Karsten. l. c.
- "FUNGI OF THE PACIFIC COAST, V." By H. W. Harkness, M. D. Extract from Bulletin of the California Academy of Sciences.
- "POLYPORUS SANGUINEUS." By P. H. Dudley. Journal of the New York Microscopical Society, July, 1887.
- "CHAMÆCYPARIS SPHÆROIDEA, SPACH. (WHITE CEDAR), AND ITS FUNGUS, AGARICUS CAMPANELLA, BATSCH." By P. H. Dudley. l. c.
- "H. W. RAVENEL—NOTICE OF DEATH." By W. G. Farlow. Botanical Gazette, August, 1887.

Besides an outline of his life, a list of his botanical publications is given. They were mostly in phenogamic botany, but his work in the cryptogams, especially fungi, was most valuable.

- "A NEW FUNGUS DISEASE OF THE VINE." By F. L. Scribner and Pierre Viala. Agricultural Science, September, 1887.

The fungus in question has been named *Greeneria fuliginea*, is both saprophytic and parasitic, and has been very destructive to the berries at Tokay, near Fayetteville, N. C. It was not observed upon the leaves. Pustules are formed just beneath the epidermis; have no ostiola; size when mature, 17 μ to 25 μ ; the basidia fill the interior, then rupture the pustules expand over the surface and bear the conidia. The latter are 0 μ .954 to 1 μ .213, of a ferruginous color.

ERRATA.

In Vol. II, p. 78, seventh line from the bottom, and on p. 105 of the current volume, sixteenth line from the bottom, for "see" read "sec," which is the abbreviation of the latin word "secundum," meaning "according to."

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THE LICHEN-FLORA OF FLORIDA.

Catalogue of Species, with Notes, and also Notices of New Species.

BY JOHN W. ECKFELDT, M. D., PHILADELPHIA, AND W. W. CALKINS, CHICAGO.

The authors have undertaken the present paper in the belief that the facts and material in their possession should be published for the benefit of lichenists generally and as a contribution to our knowledge in a little-explored field as regards the subject under consideration. True, numerous collectors have been over the ground and have been well rewarded; but, after all, each additional research brings to light new or rare species and demonstrates that all of us have as yet merely skirmished on the line. The finding of four or five new species during the past winter by one of the authors, within a space less than ten feet square, only shows what to expect in the future, if proper efforts are made. The authors give herein no species not properly verified as being found in Florida, and, indeed, a large proportion are the results of personal collections. The determination has been entirely by the senior author, Dr. Eckfeldt, who, in doubtful or difficult cases, was so fortunate as to secure the valuable assistance of Dr. W. Nylander, of Paris. The new species were determined by the latter world-known lichenist, and, if possible, full descriptions of these will be given. The number enumerated may seem large, and yet we venture to say that in time it will be increased one third or more. The geographical position of Florida, her physical relations past and present to the West Indies and the Antillean system; her climate and soil, as well as parallels of distribution found in her phenogamic botany, warrant our belief. The order of arrangement of the list will be that after Tuckerman (*Genera Lichenum*) and recent writers on special genera in Lichenology.

PARMELIACEI.

USNEEI.

RAMALINA ACH., De Not.

1. R. USNEOIDES (Ach.) Fr.—Infrequent; on old trunks. Herb. Austin, Lichens of Florida.
2. R. RIGIDA (Pers.)—On old trunks; frequent.
3. R. RIGIDA, var. MONTAGNEI, Tuck.—On old trunks. S. Fla.

4. *R. STENOSPORA*, Mull.—On old trunks. Westward along the Gulf.

5. *R. COMPLANATA* (Sw.) Ach. Westward to Mexico.

6. *R. CALICARIS* (L.) Fr.—Small forms; found on trunks.

CETRARIA (Ach.) Fr. Mull.

7. *C. CILIARIS* (Ach.)—On dead wood near Palatka.

EVERNIA (Ach.) Mann.

8. *E. FURFURACEA* (L.) Mann.—Infrequent.

USNEA (Dill.) Ach.

9. *U. BARBATA* (L.) Ach.—Abundant on various trees.

10. *U. BARBATA*, var. *FLORIDA*, Fr.—Very common.

11. *U. BARBATA*, var. *CERATINA*, Schaer.—Frequent.

12. *U. ANGULATA* (Ach.)—On old trees; not fertile.

13. *U. TRICHODEA*, Ach.—Herb. Schweinitz.

PARMELIEI.

THELOSCHISTES, Norm. emend.

14. *T. CONCOLOR* (Dicks.)—Abundant on various trees.

15. *T. CHRYSOPHTHALMUS* (L.) Norm.—On old trees.

16. *T. FLAVICANS*, Wallr.—Common on old trees.

17. *T. LYCHNEUS* (Nyl.)—Occasional.

PARMELIA (Ach.)—De Not.

18. *P. PERFORATA* (Jacq.) Ach.—Very abundant on oaks.

19. *P. TILICEA* (Hoffm.) Floerk.—Common on various trees.

20. *P. CAPERATA* (L.) Ach.—On trunks, dead wood, etc.

21. *P. LATISSIMA*, Fee.—On smooth trunks.

22. *P. CETRATA*, Ach.—Common.

23. *P. CRINITA*, Ach.—Common.

24. *P. LÆVIGATA* (Sm.) Nyl.—Common.

25. *P. TILIACEA*, var. *SULPHUROSA*, Tuck.—Frequent on old trunks.

26. *P. BORRERA*, Turn.—Northern portions of the state; on trunks; fertile.

27. *P. BORRERA*, var. *RUDECTA*, Tuck.—Frequent on various barks.

28. *P. COLPODES*, Ach. Nyl.—A common lichen; frequently infertile.

29. *P. LEUCOCHLORA*, Tuck.

30. *P. CONSPERSA* (Ehrh.)—Ach.

PHYSICIA (D. C., Fr.) Th. Fr.

31. *P. PULVERULENTA* (Schreb.) Nyl.—On *Ficus* and *Quercus*.

32. *P. STELLARIS* (L.)—Common.

33. *P. HYPOLEUCA* (Muhl.) Tuck.

34. *P. RAVENELII*, Tuck.

35. *P. AQUILA* (Ach.) Nyl.

36. *P. AQUILA*, var. *DETONSA*, Tuck.

37. *P. ASTROIDEA* (Fr.) Nyl.

38. *P. CRISPA* (Pers.) Nyl., Herb. Ravenel.

39. *P. TRIBACEA* (Ach.) Tuck.

40. *P. OBSCURA* (Ehrh.) Nyl.

41. *P. ADGLUTINATA* (Fl.) Nyl.

PYXINE, Fr.—Tuck.

42. *P. PICTA* (Sw.) Tuck.—Abundant.

43. *P. SOREDIATA*, Fr.—On *Ficus* and *Sabal*.

PELTIGEREI.

STICTA (Schreb.) Fr.

44. *S. AURATA* (Sm.) Ach.—On *Magnolias*, etc.

45. *S. CROCATATA* (L.) Ach.

46. *S. EROSA* (Eschw.) Herb. Austin.

NEPHROMA, Ach.

47. *N. HELVETICUM*, Ach.

PELTIGERA (Willd. Hoffm.) Fee.

48. *P. POLYDACTYLA* (Neck.) Hoffm.—Common westward to Louisiana.

PANNARIEI.

PHYSMA, Mass.

49. *P. LURIDUM* (Mont.)—On *Andromeda*.

PANNARIA, Delis.

50. *P. RUBIGINOSA* (Thunb.) Delis.—On *Andromeda*; abundant.

51. *P. MOLYBDÆA* (Pers.) Tuck.—Not common. Herb. Ravenel, Calkins & Eckfeldt.

52. *P. STELLATA* (Tuck.) Nyl.—Abundant on *Carpinus*. Calkins.

53. *P. PANNOSA* (Sw.) Delis.—Infertile; introduced from the tropics.

54. *P. LEUCOSTICTA*, Tuck.

COLLEMEI.

COLLEMA, Hoffm. & Fr.

55. *C. AGGREGATUM*, Nyl.—Abundant on various shrubs; also in Cuba and Central America.

56. *C. NIGRESCENS* (Huds.) Ach.—Common; has a wide range.

57. *C. PYCNOCARPUM*, Nyl.

58. *C. CYRTASPIS*, Tuck.

59. *C. CALLIBOTRYS*, Tuck.

60. *C. LEPTALEUM*, Tuck.

61. *C. FLACCIDUM*, Ach.

LEPTOGIUM, Fr. & Ach.

62. *L. TREMELLOIDES* (L. fil.) Fr.—Abundant. Calkins, Herb. Austin.

63. *L. DENDRISCUM*, Nyl.—Herb. Eckfeldt.

64. *L. ALBOCILIATUM*, Desmaz.—Upon mosses in swamps.

65. *L. PULCHELLUM* (Ach.) Nyl.

66. *L. FOVEOLATUM*, Nyl.—Very closely related to No. 65.

67. *L. MARGINELLUM* (Sw.) Herb. Ravenel.

68. *L. CHLOROMELUM* (Sw.) Nyl.

69. *L. BULLATUM* (Ach.) Mont.—On old trees. Herb. Austin.

70. *L. MYOCHROUM* (Ehrh.) Tuck.—In low places.

LECANOREI.

PLACODIUM (DC.) Naeg. & Hepp.

71. *P. CINNABARINUM* (Ach.) Anz.

72. *P. AURANTIACUM*, Ligbt. Naeg. & Hepp.

73. *P. CERINUM* (Hedw.) Naeg. & Hepp.

74. *P. FERRUGINEUM* (Huds.) Hepp.

75. *P. CAMPTIDIUM*, Tuck.

76. *P. FLORIDANUM*, Tuck.

77. *P. VITELLINUM* (Ehrh.) Naeg. & Hepp.

LECANORA, Ach., Tuck.

78. *L. PUNICEA*, Ach.—Very abundant on various trees.

79. *L. PALLESCENS* (L.) Schaer.—On hickory, *Ilex*, etc.

80. *L. VARIA* (Ehrh.) Nyl.—On *Castanea*, etc.

81. *L. PALLIDA* (Schreb.) Schaer.—Very fine; abundant.

82. *L. PALLADA*, var. *CANCRIFORMIS*, Tuck.—Abundant. *L. caesia rubella* of Nylander.

83. *L. SUBFUSCA*, Ach.—Common.

84. *L. SUBFUSCA*, var. *DISTANS*, Ach.—Smaller and paler than the preceding species.

85. *L. ATRA* (Huds.) Ach.—Very common.

86. *L. CUPRESSI*, Tuck., *in litt.*—Very common on *Taxodium*. By some considered a variety of *L. varia*; quite distinct.

87. *L. MICULATA*, Ach.

88. *L. HAGENI*, Ach.

89. *L. GRANIFERA*, Ach.

90. *L. CINEREA* (L.) Somm.

91. *L. XANTHOPHANA*, Nyl.

92. *L. FUSCATA* (Schrad.) Th. Fr.

93. *L. PRIVIGNA* (Ach.) Nyl.

RINODINA, Mass.—Stizenz, Tuck.

94. *R. CHRYSOMELÆNA* (Ach.) Tuck.

95. *R. SOPHODES* (Ach.) Tuck.

96. *R. FLAVA-NIGELLA*, Tuck.

97. *R. CONSTANS* (Nyl.) Tuck.

PERTUSARIA, DC.

98. *P. VELATA* (Turn.) Nyl.—Common on *Quercus*.

99. *P. MULTIPUNCTATA* (Turn.) Nyl.—Large and fine; on *Ilex*.

100. *P. COMMUNIS*, DC.—*Porina pertusa* (L.) Ach., is a synonym; common.

101. *P. LEIOPLACA* (Ach.) Schaer.—Abundant; might be mistaken for *P. Wulfenii*, but the color is lighter.

102. *P. PUSTULATA* (Ach.) Nyl.—Quite distinct from others in the form of the apothecia; color variable also.

103. *P. WULFENII*, DC.—A marked species, suggesting in appearance *Thelotrema* (Syn. *Thelo. hymenium*, Turn. & Borr.) Allied to *P. leio-placa*, but the spores are eight in the thekes.

CONOTREMA, Tuck.

104. *C. URCEOLATUM* (Ach.) Tuck.

GYALECTA (Ach.) Anzi.

105. *G. LUTEA* (Dicks.) Tuck.

106. *G. PINETI* (Schrad.) Tuck.—On old *Polyporus*.

URCEOLARIA, Ach. Fl.

107. *U. SCRUPOSA* (L.) Nyl.—Does not appear to be common in Florida. Have only found it on *Carpinus Caroliniana* (Calkins).

108. *U. ACTINOSTOMA*, Pers.—Occasional.

THELOTREMA (Ach.) Eschw.

109. *T. SUBTILE*, Tuck.—Abundant on *Carpinus* (Calkins).

110. *T. DOMINGENSE* (Fee., Nyl.) Tuck.—Common on *Ulmus* (Calkins); of tropical derivation.

111. *T. DOMINGENSE*, var. *RHODOSTROMA*, Nyl.—An elegant species; found on *Carpinus* (Calkins, Austin).

112. *T. LEPADINUM*, Ach.—On *Persea*; not common.

113. *T. LEPROCARPUM* (Nyl.) Tuck.—Not common.

114. *T. GLAUDESCENS*, Nyl.—Rare on old logs; also in Cuba.

115. *T. LEPADODES*, Nyl.—On various trees.

116. *T. MICROPORUM* (Mont.) Herb. Ravenel.

117. *T. LATHRAEUM*, Tuck., Herb. Austin.

118. *T. GRANULOSUM*, Tuck., Herb. Austin.

119. *T. AUBERIANUM*, Mont., Herb. Austin.

120. *T. WRIGHTII* (Tayl.) Nyl.

121. *L. RAVENELII* (Tuck.) Nyl.

GROSTOMUM, Fr. GYROSTOMUM.

122. *G. SCYPHULIFERUM* (Ach.) Fr.—Very common.

MYRIANGIUM, M. & B.

123. *M. DURIÆI* (M. & B.) Tuck.—Common in Cuba also. *M. Curtisii*, M. & B., is the same.

LECIDEACEÆ.

CLADONIEÆ.

CLADONIA, Hoffm.

124. *C. SYMPHYCARPA*, Fr.—Common on earth.

125. *C. MITRULA*, Tuck.—Abundant on old logs and damp earth.

126. *C. PYXIDATA* (L.) Fr.

127. *C. PYXIDATA*, var. *POCILLUM*, Ach.—On earth.

128. *C. SQUARROSA*, Hoffm.

129. *C. FIMBRIATA* (L.) Fr.—Common.

130. *C. FIMBRIATA*, var. *TUBÆFORMIS*, Fr.

131. *C. GRACILIS* (L.) Nyl.

132. *C. GRACILIS*, var. *VERTICELLATA*, Fr. (*Cenomyce Floridanum*, Herb. Schw.

133. *C. PAPILLARIA* (Ehrh.) Hoffm.

134. *C. SANTENSIS*, Tuck.—On earth.

135. *C. FURCATA* (Huds.) Fr.

136. *C. FURCATA*, var. *RACEMOSA*, Fl.

137. *C. FURCATA*, var. *SUBULATA*, Fl.

138. *C. RANGIFERINA* (L.) Hoffm.—On trees and on the ground, forming beautiful tufts, unattached, which are highly prized for decorative purposes. A cosmopolite. We have noticed acres of it on the

mountains of Tennessee and Georgia in masses one foot thick.

139. *C. RANGIFERINA*, var. *SYLVATICA*, L.

140. *C. RANGIFERINA*, var. *ALPESTRIS*, L.

141. *C. UNCIALIS* (L.) Fr.

142. *C. PULCHELLA*, Schw.

143. *C. RAVENELII*, Tuck.

144. *C. CRISTATELLA*, Tuck.

145. *C. LEPORINA*, Fr.

CÆNOGONIEI.

CÆNOGONIUM, Ehrh.

146. *C. INTERPOSITUM*, Nyl.—Common; also in Cuba.

(To be continued.)

TRICOTHECIUM GRISEUM, CK. (PYRICULARIA, SACC.)

My colleague, Dr. Kellerman, finds this in Kansas on a species of *Muhlenbergia* associated with *Phyllachora graminis*, Pers., on the stroma of which it is parasitic (?) or of which, more probably, it constitutes the conidial stage. It does not differ from the normal form on *Panicum* otherwise than in its arising directly from the stroma of the *Phyllachora*. What may also be a form of the same was found on withered leaves of *Paspalum setaceum* growing as before directly from the stroma of the same *Phyllachora* or more or less effused around it, but differing from the form on *Muhlenbergia* in its darker colored (olivaceous) hyphæ, often dichotomously branched above, and in its longer, narrower conidia, which are oblong-fusoid, subhyaline, one-septate at first, but finally three-septate, $25-35 \times 5-7 \mu$. With these conidia, however, were some which presented very nearly the normal shape, unless a little narrower. We have called this latter form *Tricothecium griseum*, Ck., var. *leptosperma*, E. & K. J. B. E.

NEW SPECIES OF FUNGI FROM KANSAS.

BY J. B. ELLIS AND W. A. KELLERMAN.

VERMICULARIA CICADINA, E. & K.—On membrane of the wings of dead Cicada. Manhattan, Ks., September, 1887. Kellerman & Swingle, 1087. Perithecia scattered, depressed-hemispherical, $100-120 \mu$ in diameter, sparingly clothed with erect, spreading, opaque, continuous bristles about 75μ long and sub-bulbous at the base; sporules arcuate-fusoid, ends subacute, hyaline, about $22 \times 2\frac{1}{2} \mu$, on clavate, oblong-basidia, about $10 \times 2\frac{1}{2} \mu$. The fungus is also found, but in an immature condition, on living Cicadæ.

PERONOSPORA LINI, E. & K.—On *Linum sulcatum*. Manhattan, Ks., Sept., 1887. Kellerman & Swingle, 1077. Sparsely scattered on the stems and leaves; conidiophores about half a millim. high, subfastigiately dichotomously branched above, the tips slender and very slightly curved; conidia elliptical, yellowish-brown, $20-22 \times 11-13 \mu$. Oospores not seen.

CERCOSPORA VULPINA, E. & K.—On living leaves of *Vitis vulpina*. Manhattan, Ks., Sept., 1887. Kellerman & Swingle, 1081. Spots amphigenous, small (1—2 millim.), subangular, mostly limited by the veinlets, dark brown above, rather paler beneath; hyphæ mostly hypophyllous, fasciculate, pale brown (subfuliginous), continuous or with 1—3 faint septa, distinctly toothed and abruptly bent above, $50-75 \times 3-4 \mu$; conidia obclavate, smoky-hyaline, nucleate and finally 2—3-septate, curved, $45-60 \times 3-4 \mu$. This differs essentially from the other viticous species.

SPHÆRELLA SOLIDAGINEA, E. & K.—On dead leaves of *Solidago Canadensis*. Manhattan. (Kellerman & Swingle, 1115.) Perithecia erumpent-superficial, $80-100 \mu$ in diameter, subglobose, of rather coarse, cellular structure, pierced above, scattered or collected in groups; asci $35 \times 9-10 \mu$; sporidia biseriate, clavate-oblong, nucleate, slightly constricted near the middle, $20 \times 3\frac{1}{2} \mu$, hyaline.

FUSARIUM PARASITICUM, E. & K.—Parasitic on *Puccinia Seymeriæ*, Burrill. On *S. macrophylla*, Manhattan, Kas., October, 1887. (Kellerman & Swingle, 1104.) Forming a thin, grayish-white layer on the sori of the *Puccinia*; hyphæ short (35μ), much branched above; conidia lunate, attenuated and acute at each end, faintly about three-septate, $20-30 \times 3 \mu$.

CERATOPHORUM ULMICOLUM, E. & K.—On living leaves of *Ulmus fulva*. Manhattan, Kas. (Kellerman & Swingle, 1112.) Maculicolous; spots amphigenous, suborbicular, dirty-brown, with a small, white center, $\frac{1}{2}-1$ cm. across, subconfluent; conidia ventricose-fusoid, attenuated below into a subhyaline, subobtuse, sessile base and prolonged above into a curved, hyaline beak, swollen, dark olivaceous and 5—7-septate in the middle, $60-100 \times 11-14 \mu$. The conidia are sessile on a small, tubercular, cellular base and form compact tufts, which resemble a *Vermicularia*. The tufts are amphigenous, but perhaps more abundant above and are not confluent but thinly scattered over the spots. This is intermediate in the size of the conidia between *C. helicosporum*, Sacc., and *C. uncinatum*, Clinton, and differs from both of these in its tufted or punctate mode of growth, in which it resembles *C. epiphyllum*, B. & C., which, however, has much smaller, multiseptate conidia. The subhyaline extremities of the conidia are faintly septate and sometimes one or more of the cells in the colored part has a longitudinal septum.

NEW SPECIES OF FUNGI FROM VARIOUS LOCALITIES.

BY J. B. ELLIS AND B. M. EVERHART.

SPHÆRIA (METASPHAERIA) STENOTHECA, E. & E.—On sheaths of dead culms of *Panicum Curtisii*. Pointe à la Hache, La., February, 1887. Langlois, No. 1028. Perithecia scattered, membranaceous, subovoid, one-fourth millim. in diameter, buried in the matrix except the rather prominent, depressed, conoid apex, which is covered by the blackened

cuticle (except the papilliform ostiolum); asci linear, 70—80 x 4—5 μ , with indistinct paraphyses; sporidia in a single series, with their ends mostly overlapping, oblong-fusoid, 3—4-nucleate, becoming three septate, subhyaline, 12—16 x 3 μ . Quite distinct from other graminicolous species in its narrow, linear asci.

SPHÆRELLA STAPHYLINA, E. & E.—On living leaves of *Staphylea trifolia*. Manhattan, Kas., July, 1887. W. T. Swingle. Maculicola; spots amphigenous, irregular, often narrow and elongated, mostly few on a leaf, 2—4 millim. or sometimes 1—1½ cm. and occasionally occupying an entire half of the leaf, causing the affected part to dry up and fall away; perithecia minute, visible on both sides, sublenticular and subastomous, membranaceous, black, 75—100 μ diameter; asci oblong, sessile, 40—6 x 12 μ , without paraphyses; sporidia crowded-biseriate, oblong-elliptical, subinequilateral, one-septate and constricted, yellowish-hyaline, 12—15 x 5 μ , accompanied by a macrosporium and by smaller stylosporiferous perithecia, containing elliptical, subfuscous, continuous spores, about 5 x 2½ μ .

DENDRYPHIUM SUBSESSILE, E. & E.—On dead stems of *Smilax hispida*. Manhattan, Kas., July, 1887. W. T. Swingle. Forming a more or less continuous, thin, black layer on the surface of the stems; hyphæ almost obsolete; conidia concatenate, sessile, subcylindrical, brown, about five-septate, 25—45 x 6—7 μ , 2—4-concatenate.

VENTURIA ERYSIPIHIOIDES, E. & E.—On dead culms or sheaths of *Panicum Curtisii*. Pointe a la Hache, La., February, 1887. Langlois, No. 1023. Perithecia gregarious, black, globose, about 100 μ in diameter, broadly perforated above, beset with scattering, rigid, black continuous bristles, 40—70 x 5—6 μ ; asci oblong, sessile, without paraphyses, 40—45 x 7—8 μ ; sporidia crowded, fusiform, hyaline, slightly curved, 5—6-nucleate, about 20 x 2½ μ . This differs from *V. graminicola*, Winter, in its smaller perithecia (80—110 μ) with shorter, lateral bristles and its narrower sporidia (2—2½ μ). The number of bristles on a perithecium is generally not over ten or twelve and they stand out horizontally or nearly so, reminding one of some of the *Erysipheæ*.

GLOEOSPORIUM LIRIODENDRI, E. & E.—On leaves of *Liriodendron Tulipiferae*. Faulkland, Del., August, 1887. A. Commons. Maculicola; epiphyllous; spots ochraceous, round, border darker; acervuli minute, pale, innate; spores oblong, 12—16 x 5 μ , hyaline, ends obtuse, cirrhi punctiform, minute or, by confluence, larger and flattened, flesh color.

GLOEOSPORIUM DECIPIENS, E. & E.—On living leaves of *Fraxinus Americana*. Manhattan, Kas. July, 1887. W. T. Swingle. This resembles outwardly *G. punctiforme*, E. & E., on leaves of *Fraxinus Americana* from Delaware. The spores, however, are quite different from those of the Delaware specimens, which are 15—22 x 7—8 μ , one-septate and constricted, while these are 22—50 (mostly 35—50) x 3—5 μ (mostly 4—5 μ), probably becoming one-septate, as a few have the endochrome faintly divided in the middle. This species, with *G. Argemonis* and *G. rostratum*, have the elongated, cylindrical spores (conidia) of *Cylindro-*

sporum, but the larger acervuli and the firmly conglutinated mass of ejected spores are of the same character as in *Gloeosporium*. In all the genuine species of *Cylindrosporium*, the spores are ejected from the minute and usually numerous acervuli in loosely floccose or pulverulent masses which are usually more or less confluent. *Cylindrosporium Padi*, Karst., belongs in this same category.

GLOEOSPORIUM DIOSPYRI, E. & E.—On leaves of *Diospyrus Virginianus*. Faulkland, Del., August, 1887. A. Commons, No. 606. Acervuli innate, erumpent on the upper side of the leaf on the veinlets of the leaf in small, pale-tuberculiform masses; spores ovate, granular, 6—14 x 5—7 μ . The leaf is more or less yellow and the part occupied by the fungus dull olive-brown.

GLOEOSPORIUM PRUNICOLUM, E. & E.—On living leaves of *Prunus Virginiana*. Racine, Wis., July, 1887. Dr. J. J. Davis. Maculicola; spots irregular, 3—10 millim. in diameter, dark rusty brown, finally deciduous; acervuli innate, minute; spores elliptical, mostly 4—6 x 2½ μ , discharged in minute, whitish heaps on both sides of the leaf but more abundantly below.

GLOEOSPORIUM NECATOR, E. & E.—On living canes of black and red raspberry. Sent from Evanston, Ill., by Chas. Wheeler, August, 1881, and from Cobden, Ill., by F. S. Earle, June, 1884; also received from Columbia, Mo., June, 1887, from B. T. Galloway. Spots cauliculous, pale, with a slightly raised, dark border, 2—3 millim. in diameter, orbicular or elliptical; spores oblong-elliptical, 5—7 x 3 μ , oozing out in an amber-colored mass through a single opening in the center of each spot. Reported as being very injurious. *G. Venetum*, Sacc., has spores of about the same size but is a foliicolous species. The Illinois specimens were reported as *Phyllosticta necator*, but the fungus is evidently a *Gloeosporium*.

GLOEOSPORIUM ARGEMONIS, E. & E.—On living leaves of *Argemone platyceras*. Manhattan, Kas., July, 1887. W. T. Swingle. Maculicola; spots amphigenous, definite, suborbicular, dirty gray above, purplish black below and subzonate, mostly about a half cm. in diameter, with a slightly raised, narrow margin; acervuli minute, scattered, mostly erumpent below, discharging the spores in small yellowish and amber-colored heaps; spores subcylindrical, arcuate, hyaline, granular and nucleolate, mostly a little narrower at one end, 22—40 x 2½—3 μ .

GLOEOSPORIUM ROSTRATUM, E. & E.—On living leaves of *Corylus rostrata*. British Columbia, May, 1887. Prof. John Macoun. Maculicola; spots amphigenous, subrotund, 1—2 millim. in diameter, pale rust color, margin narrow and darker; acervuli minute, mostly clustered in the center of the spots, amber color, epiphyllous; spores cylindrical, curved, 35—45 x 2½—3 μ , granular and nucleate, with indications of becoming at length three-septate. This is quite different from *G. Coryli* (Desm.), which is mostly hypophyllous and has spores 12—15 x 5—6 μ .

CYLINDROSPORIUM RANUNCULI (Bon.) f. THALICTRI, E. & E. On fading leaves of *Thalictrum purpurascens*. Manhattan, Ks. W. T. Swingle. Spots amphigenous, irregular, more or less angular, with a narrow, darker margin, dark brown, becoming more or less dirty whitish; acervuli innate, discharging the spores below in small, light-colored heaps; spores filiform, more or less curved, continuous, $30-60 \times 1\frac{1}{4} \mu$. Probably *C. Clematidis*, E. & E. (JOUR. MYCOL., III, p. 22) should also be considered as a variety of this species, which is represented and figured by both Bonorden and Saccardo as quite variable in the thickness and length of its spores.

CYLINDROSPORIUM CAPSELLÆ, E. & E.—On living leaves of *Cap-sella Bursu-pastoris*. Columbia, Mo., May, 1887. B. T. Galloway, No. 253. Spots amphigenous, round (1—4 millim.), mostly a little depressed above, whitish; conidia erumpent above, giving the surface of the spots a farinose appearance, cylindrical, granular, becoming faintly three-septate, the middle septum being more distinct, $35-45 \times 3 \mu$; hyphæ consisting of slightly elongated cells of the proligerous layer. This is quite a different thing from *Cercospora Cruciferarum*, E. & E.

PHYLLOSTICTA GERANII, E. & E.—On living leaves of *Geranium Carolinianum*. Point a la Hache, La., March, 1887. Langlois, No. 1096. Spots amphigenous, small (1—1½ millim.), round or subangular, whitish above, rusty color below, margin narrow, darker and slightly raised; perithecia few, punctiform, black, erumpent, mostly epiphyllous; sporules subelliptical or suboval, hyaline, $2\frac{1}{2}-3 \times 1 \mu$.

PHYLLOSTICTA STILLINGIÆ, E. & E.—On leaves of *Stillingia sebifera*. Point a la Hache, La., November, 1886. Rev. A. B. Langlois, No. 847. Spots amphigenous, definite, reddish-brown, not abundant, 2—3 millim. in diameter; perithecia epiphyllous, scattered, few, dark, convex; sporules oblong-elliptical, two-nucleate, hyaline, $5-7 \times 2\frac{1}{2}-3 \mu$.

PHYLLOSTICTA YUCCÆGENA, E. & E.—On leaves of *Yucca*. Florida. W. W. Calkins, No. 773. Spots amphigenous, discoid, oblong or acutely elliptical, concave on both sides and with an obtuse, raised border, $1-2 \times \frac{1}{2}$ cm.; perithecia immersed, large ($\frac{1}{2}$ millim.), scattered, amphigenous, sometimes subconfluent, raising and rupturing the epidermis; sporules hyaline, with coarse, granular contents or nuclei. irregularly elliptical and subinæquilateral, ends subacute, $18-22 \times 7-8 \mu$. The same thing occurs without any spots on younger, thinner leaves (No. 774).

P. Gaultheriæ, E. & E., has been sent by Prof. J. Macoun from British Columbia on leaves of *Gaultheria Shallon*, differing from the New Jersey specimens (on *G. procumbens*) only in the less numerous perithecia and sporules more generally globose.

(To be continued.)

NEW LITERATURE.

BY W. A. KELLERMAN.

"AECIDIUM ON JUNIPERUS VIRGINIANA." W. G. Farlow, Botanical Gazette, September, 1887.

On a visit to Bermuda in the winter of 1881, Dr. Farlow searched in vain for a species of *Gymnosporangium*. He found, however, galls similar to those caused by those species on cedars (*Juniperus Bermudiana*), which subsequent examination proved to be caused by an *Aecidium*. Better material was afterward (in the spring) received from Mississippi, found on *Juniperus Virginiana*. The new species has been named *Aecidium Bermudianum*, Farlow. Dr. Farlow suspects that the "present *Aecidium* has no connection with our known *Gymnosporangia* and that its other stages may very likely be traced to other *Uredineae* which inhabit warmer regions near the Gulf of Mexico and the Atlantic."

"THE 'CURL' OF PEACH LEAVES: A STUDY OF THE ABNORMAL STRUCTURE, INDUCED BY EXOASCUS DEFORMANS." Etta L. Knowles. l. c.

"NOTICE SUR DEUX MUCEDINEES NOUVELLES, L' ISARIA CUNEISPORA OU ETAT CONIDIAL DU TORRUBIELLA ARANICIDA, BOUD., ET LE STILBUM VIRIDIPES." Par M. Boudier, Revue Mycologique, 1er Octobre, 1887.

"ASCOMYCETES NOVI FENNICI." Descripsit P. A. Karsten. l. c.

"CONTRIBUTIONES AD FLORAM MYCOLOGICAM LUSITANIE." Fungi Lusitanici a Cl. Moller lecti, Auctoribus Dr. A. N. Berlese et C. Roumeguere. l. c.

"FUNGI GALLICI EXSICCATI." Centurie XLIIIe. C. Roumeguere. l. c.

"LES CARACTERES DISTINCTIFS DES ROT DE LE VIGUE." Par J. E. Planchon. l. c.

"LES CHAMPIGNONS DESTRUCTEUR DU PLATANE." C. Roumeguere. l. c.

"DU PARASITISME DES TRUFFES." H. Bonnet. l. c.

"CATALOGUE PROVISoire DE PLANTES PHANEROGAMES ET CRYPTO-GAMES DE LA BASSE-LOUISIANE, ETATS-UNIS D' AMERIQUE." A. B. LANGLOIS.

ERRATA.

On page 81, current volume, under *Septoria punicea*, Pk., for "10—45 μ " read "100—150 μ ." On page 111, bottom line, for "said" read "dried."

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THE LICHEN-FLORA OF FLORIDA.

Catalogue of Species, with Notes, and also Notices of New Species.

BY JOHN W. ECKFELDT, M. D., PHILADELPHIA, AND W. W. CALKINS, CHICAGO.

(Continued from page 126.)

LECIDEI.

BÆOMYCES.

- 147. B. ROSEUS, Pers.
- 148. B. FUNGOIDES (Sw.) Ach.
- 149. B. BYSSOIDES (L.) Fr.
- 150. B. ABSOLUTUS, Tuck.
BIATORA, Fr.
- 151. B. RUSSELLII, Tuck.
- 152. B. GLOBIFERA (Ach.) Fr.
- 153. B. RUFO-NIGRA, Tuck.
- 154. B. COARCTATA (Ach.) Th. Fr.
- 155. B. PETRI, Tuck.
- 156. B. VERNALIS (L.) Fr.
- 157. B. PARVIFOLIA (Pers.)
- 158. B. RUSSULA (Ach.) Mont.
- 159. B. SANGUINEO-ATRA, Fr.
- 160. B. EXIGUA (Chaub.) Fr.
- 161. B. QUERNEA (Dicks.) Th. Fr.
- 162. B. MUTABILIS, Fee.
- 163. B. FURFURACEA, Kremph.
- 164. B. FURFUROSA, Nyl.
- 165. B. HYPOMELA, Nyl.
- 166. B. TURGIDULA, Fr.
- 167. B. MIXTA, Fr.
- 168. B. ATRO-PURPUREA, Mann.
- 169. B. LEUCOBLEPHARA (Nyl.)
- 170. B. SPHÆROIDES, Smf.
- 171. B. HYPNOPHILA, Turn.
- 172. B. RUBELLA (Ehrh.) Rab.
- 173. B. FUSCORUBELLA (Hoffm.)
- 174. B. MEDIALIS, Tuck.
- 175. B. STIGMATELLA, Tuck.

- 176. *B. MICROPHYLLINA*, Tuck.
- 177. *B. RUFESCENS*, Mull.
- 178. *B. FOSSARUM* (Duf.) Mont.
- 179. *B. ATRO-GRISEA*, Hepp.
- 180. *B. ULIGINOSA* (Schrad.) Fr.

HETEROTHECIUM (Fl.) Tuck.

- 181. *H. TUBERCULOSUM* (Fee.) Fl.
- 182. *H. TUBERCULOSUM*, var. *PARPHYRITES*, Tuck.
- 183. *H. TUBERCULOSUM*, var. *PACHYCHEILUM*, Tuck.
- 184. *H. TUBERCULOSUM*, var. *PACHYCARPUM* (Fr.)
- 185. *H. AUGUSTINI*, Tuck.—On palmetto fronds ; abundant.
- 186. *H. LEUCOXANTHUM* (Spreng.)—Common.
- 187. *H. PEZIZOIDEUM* (Ach.) Fl.—On *Carpinus*.
- 188. *H. ENDOCHROMA* (Fee.)
- 189. *H. DOMINGENSE* (Pers.) Fl.
- 190. *H. VERSICOLOR* (Fee.)
- 191. *H. LEPTOCHEILUM*, Tuck.
- 192. *H. VULPINUM*, Tuck.

LECIDEA (Ach: Fr.)

- 193. *L. FLORIDENSIS*, Nyl., nov. sp.—Found on *Carpinus Caroliniana*; rare ; discovered in 1887 ; a beautiful and well marked species ; Calkins.
- 194. *L. ALBO-CÆRULESCENS*.
- 195. *L. CONTIGUA* (Fr.) Nyl.
- 196. *L. TESSELLATA*, Flk.
- 197. *L. ENTEROLEUCA*, Fr.
- 198. *L. GRANOSA*, Tuck.
- 199. *L. MIKYTHO*, Tuck.

BUELLIA (DeNot.) Tuck.

- 200. *B. PARASEMA* (Ach.) Kbr.—Common.
- 201. *B. MYRIOCARPA* (DC.) Mudd.—Common.
- 202. *B. COLLUDENS*, Nyl.
- 203. *B. ALBOATRA* (Hoffm.) Nyl.
- 204. *B. PETRÆA* (Fl.) Tuck.
- 205. *B. MONTAGNEI*, Fl.

LECANACTIDII, Stitz.

LECANACTIS (Eschw. & Kbr.) Tuck.

- 206. *L. PREMNEA*, Ach.

PLATYGRAPHA, Nyl.

- 207. *P. OCELLATA*, Nyl.—On *Carpinus*.
- 208. *P. RAVENELII*, Tuck.

MELASPILEA, Nyl.

- 209. *M. ARTHONIOIDES* (Fee.) Nyl.

OPEGRAPHEI, Stitz.

OPEGRAPHIA (Humb.) Ach. & Nyl.

- 210. *O. SCAPHELLA*, var. *GEMELLA*, Eschw.—Sp. ovoid-multilocular ; on *Betula*.

- 211. *O. ATRA* (Pers.) Nyl.—Common.

- 212. *O. TRIBULOIDES*, Tuck.

- 213. *O. VARIA* (Pers.) Fr.—Common.
- 214. *O. BONPLANDI*, Fee.—Common.
- 215. *O. VIRIDIS*, Pers.
- 216. *O. ASTRÆA*, Tuck.
- 217. *O. VULGATA* (Ach.) Nyl.—Common.

GRAPHIS, Ach. & Nyl.

- 218. *G. AFZELII*, Ach.—Very abundant.
- 219. *G. ELEGANS* (Sm.) Ach.—Not common.
- 220. *G. ELEGANS*, var. *STRIATULA*, Ach.—Rare.
- 221. *G. NITIDA* (Eschw.) Nyl.—Rare.
- 222. *G. PUNCTIFORMIS*, Eschw.
- 223. *G. ERUMPENS*, Nyl.—Common on *Nyssa*.
- 224. *G. SCRIPTA* (L.) Ach.—Common.
- 225. *G. NITIDELLA*, Nyl.—Rare.
- 226. *G. DENDRITICA*, Ach.—Common.
- 227. *G. SOPHISTICA*, Nyl.—Not rare.
- 228. *G. ASSIMILIS*, Nyl.
- 229. *G. SALPTURATA*, Ach.—Scalpturata.
- 230. *G. COMMA*, Ach.
- 231. *G. ABAPHOIDES*, Nyl., nov. sp.—On *Persea*; not common;
- 231-Graphis abaphoides; Calkins.
- 232. *G. POITÆOIDES*, Nyl.
- 233. *G. SUBVIRGINEA*, Nyl., nov. sp.—Found on *Ilex Cassine*;
abundant. Ft. George Island; Calkins.
- 234. *G. NITIDESCENS*, Nyl.—Not common.
- 235. *G. TENELLA*, Ach.—Common.
- 236. *G. SUBSTRIATULA*, Nyl.
- 237. *G. RIGIDA* (Fee.) Nyl.
- 238. *G. TRICOSA*, Ach.
- 239. *G. PATELLULA* (Meiss.) Nyl.
- 240. *G. SCOLECITES*, Tuck.
- 241. *G. COMETIA*, Fee.
- 242. *G. INTRICANS*, Nyl.
- 243. *G. GLAUCODERMA*, Nyl.—Gainesville, Florida.

STIGMATIDIUM, Nyl.

- 244. *S. INSCRIPTUM*, Nyl., nov. sp.—Abundant on *Carpinus*; fine;
Calkins.

CHIODECTON, Ach.

- 245. *C. RUBRO-CINCTUM*, Nyl.—Very common.
- 246. *C. MONTAGNAEI*, Tuck.—Common.

GLYPHIS, Ach., Mont. Nyl.

- 247. *G. ACHARIANA*, Tuck.—Common.

ARTHONIA, Ach. & Nyl.

- 248. *A. FLORIDANA*, Willey, nov. sp.—On *Myrica* and *Ilex*; rare;
Calkins.
- 249. *A. SUBCYRTODES*, Willey, nov. sp.—On *Myrica*; Calkins.
- 250. *A. ALBOVIRESCENS*, Nyl., nov. sp.—On *Ilex Cassine*; abun-
dant. Calkins. Ft. George Island.

251. *A. TAEDIOSA*, Nyl.—On oaks; not common.
252. *A. ASTROIDEA*, Ach.—Not common.
253. *A. PYRRHULIZA*, Nyl.—On *Myrica*; 5—7-locular spores; colorless.
254. *A. OCHROCLUTEA*, Nyl.
255. *A. GREGARINA*, Willey.—Common on *Myrica*; Calkins.
256. *A. CINNABARINA*, Wallr.—Very common on scabbards of *Sabal Palmetto*.
257. *A. DISPERSA* (Schaer.) Nyl.—On *Hamamelis* and oaks.
258. *A. QUINTARIA*, Nyl.—Calkins; abundant on *Myrica*.
259. *A. RUBELLA*, Fee.—Common.
260. *A. TAEDESCENS*, Nyl.—Not rare.
261. *A. SUBRUBELLA*, Nyl.
262. *A. ATRATA*, Fee.
263. *A. VARIA*, Ach.
264. *A. PLATYSPEILEA*, Nyl.
265. *A. CHIODECTELLA*, Nyl.
266. *A. ERUPTA*, Nyl.
267. *A. GLAUDESCENS*, Nyl.
268. *A. ASTROIDEA*, var. *SWARTZOIDEA*, Nyl.
269. *A. PUNCTIFORMIS*, Ach.
270. *A. POLYMORPHA*, Ach.
271. *A. SPECTABILIS*, Fl.
272. *A. RENIFORMIS*, Pers.—On *Pinus mitis*.
 MYCOPORUM (Fl.) Nyl.
273. *M. PYCNOCARPUM*, Nyl.—Common.
274. *M. SPARSELLUM*, Nyl.—Common.
 ACOLIUM (Fee.) DN.
275. *A. CAROLINIANUM*, Tuck.
276. *A. TIGELLARE*, Ach. DN.
277. *A. JAVANICUM* (M. & Vd. B.) Stitz.
 CALICIUM, Pers., Ach. & Fr.
278. *C. RAVENELII*, Tuck.
279. *C. SUBTILE*, Fr.
 EUDOCARPON, Hedw. & Fr.
280. *E. MINIATUM* (L.) Schaer.
281. *E. ARBOREUM*, Schw.
282. *E. RUFESCENS*, Ach.
283. *E. HEPATICUM*, Ach.
284. *E. PUSILLUM*, Tuck.
 THELOCARPON, Nyl.
285. *T. MAJUSCULUM*, Nyl.
286. *T. NUCULA*, Fr. (*SEGESTRIA NUCULA*, Fr.)—On *Carpinus*; Calkins.
 STAUROTHELE, Norm.
287. *S. UMBRINA* (Wahl.) Tuck.
 TRYPETHELIUM, Spreng. & Ach.
288. *T. UBERINOIDES*, Nyl.
289. *T. CRUENTUM*, Mont.
290. *T. PALLESCENS* (Fee.) Nyl.

291. *T. CATERVARIUM* (Fee.) Tuck.
292. *T. SCORITES* (Tuck.) Nyl.—Abundant.
293. *T. EXOCANTHIUM* Tuck.
294. *T. VIRENS*, Tuck.—Abundant.
295. *T. PYRENULOIDES*, Mont.—Abundant.
296. *T. MEGASPERMUM*, Nyl.
297. *T. HETEROCHROUS* (Mont.) Tuck. Herb. Eckfeldt.—Very rare; introduced from Cuba.
298. *T. SCORIA*, Fee.—Common.
 ASTROTHELIUM, Nyl.
299. *A. CUBANUM*, Nyl., nov. sp. In Wright's Cuban Lichens, 136.
 VERRUCARIA (Pers.) Tuck.
300. *V. RUPESTRIS*, Schrad.
301. *V. PYRENOSPHORA* (Ach.) Nyl.
 PYRENULA (Ach., Naeg. & Hepp.) Tuck.
302. *P. PULICINA*, Nyl.
303. *P. AGGREGATA*, Fee.—Common; Calkins.
304. *P. SUBCINEREA* (Nyl.) Tuck.
305. *P. HYPOMELA*, Nyl.
306. *P. FALLAX*, Nyl.—Common.
307. *P. BIFORMIS*, Nyl.—Abundant.
308. *P. CINERELLA*, Fl.—Common.
309. *P. LIBRICOLA*, Fee.—Common on *Nyssa*.
310. *P. SUBPUNCTIFORMIS*, Nyl., nov. sp.—Found on *Ilex Cassine*; abundant. Ft. George Island. Calkins.
311. *P. PUNCTIFORMIS* (Ach.) Naeg.
312. *P. QUINQUE-SEPTATA* (Nyl.) Tuck.
313. *P. CINCHONÆ* (Ach.) Tuck.
314. *P. SUBPROSTANS* (Nyl.) Tuck.—Common.
315. *P. GEMMATA* (Ach.) Naeg.
316. *P. TROPICA* (Ach.) Tuck.
317. *P. THELÆNA* (Ach.) Tuck.
318. *P. GLABRATA*, Ach.
319. *P. MAMILLANA*, Ach.
320. *P. NITIDA*, Ach.
321. *P. FALLACIOSA*, Stitz.
322. *P. AURANTIACA* (Fee.)
323. *P. LACTEA*, Tuck.—Rare.
324. *P. PACHYCHEILA*, Tuck.—Rare.
 SCOLECIOCARPUM.
325. *S. PAPULA*, Nyl.—On oak bark; a common species and has been found as far north as New Jersey.
 PYRENASTUM, Eschw.
326. *P. ASTROIDEUM* (Fee.) Eschw.
327. *P. RAVENELII*, Tuck.
328. *P. INTRUSUM*, Nyl.
 STRIGULA, Fr.
329. *S. COMPLANATA* (Fee. & Mont.) Nyl.
330. *PYRENULA ASPISTEA*, Nyl.

A NEW UROMYCES.

BY BYRON D. HALSTED, AMES, IOWA.

The following are the characteristic features of a species of *Uromyces* found near Ames, Iowa, upon leaves of *Leersia Virginica*, Willd.:

UROMYCES DIGITATUS, Halsted.—Sori mostly hypogenous, small, elongated, forming irregular rows; uredospores 22–25 x 26–30 μ , elliptical, light yellow, indistinctly echinulate, tips dark; teleutosori shining black, spores wedge-shaped and quite irregular, 17–30 x 25–33 μ , pedicel about one-half the length of spore. The broad, free end of the spore is divided into 5–20 sharp or blunt projections, the longer with hyaline tips.

This *Uromyces* approaches *U. acuminatus*, Arth., but differs from it greatly in the wedge or triangular shape of the tel-uto-spore and the large number of blunt terminations which cover the broad, free end. These irregular projections make the spore look in shape like a boxing glove; they frequently extend downward along the whole of one side of the spore.

NEW LITERATURE.

BY W. A. KELLERMAN.

“TOMATO DISEASE, CLADOSPORIUM FULVUM.” By Chas. B. Plowright. The Gardeners’ Chronicle, Oct. 29, 1887.

“THE PREPARATION OF AGARICS FOR THE HERBARIUM.” James E. Humphry. Botanical Gazette, November, 1887.

“BEITRÄGE ZUR MORPHOLOGIE UND BIOLOGIE DER UREDINEEN.” Von P. Deitel. Botanisches Centralblatt, Band XXII, Nos. 2-5.

“REPORT OF THE MYCOLOGIST, F. L. SCRIBNER.” Author’s Edition, From the An. Rep. Dept. Agr., 1886.

ERRATA.

In the November number (pp. 128 and 129) where the word “maculicola” occurs, read “maculiculous.”

On p. 126 for “*Tricothecium*” read “*Trichothecium*.”

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